MEDICAL
TIMES
Journal for the Family Physician

November, 1960

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APROSEXIA

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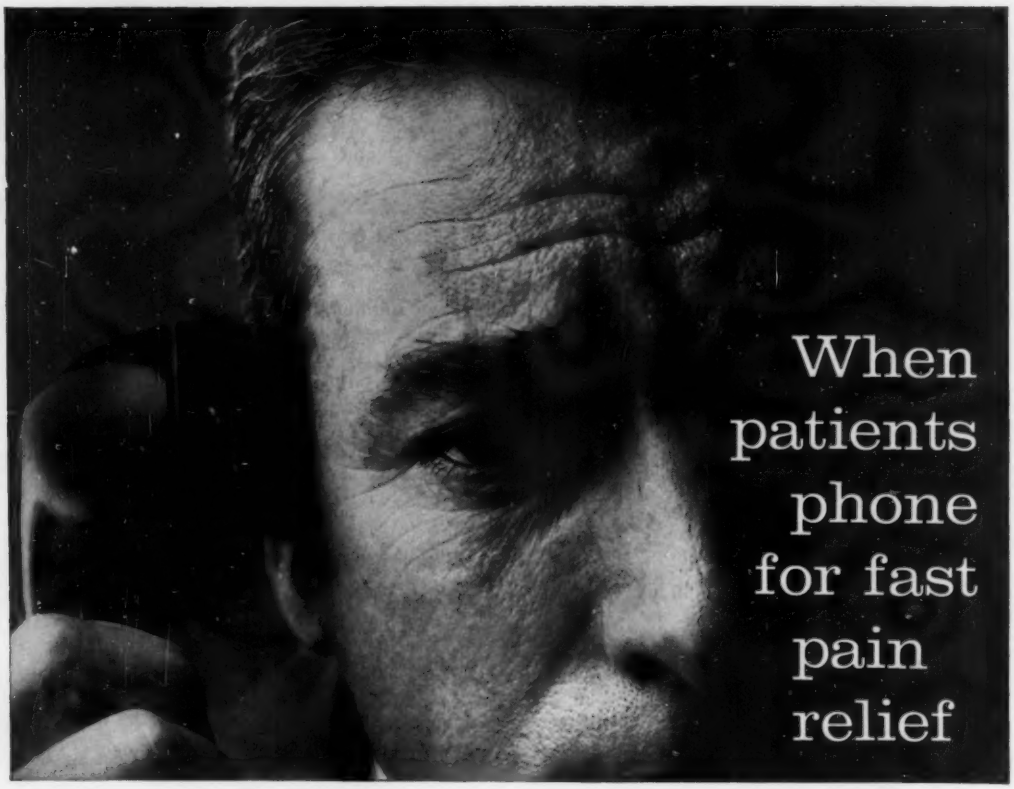
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Medical Times is published monthly by Romaine Pierson Publishers, Inc., with publication offices at 34 North Crystal Street, East Stroudsburg, Pa. Executive, advertising and editorial offices at 1447 Northern Boulevard, Manhasset, L. I., N. Y. Accepted as controlled circulation publication at East Stroudsburg, Pa. Postmaster: If undelivered, please send form 3579 to Medical Times, 1447 Northern Boulevard, Manhasset, Long Island, N. Y.



Physician's Thanksgiving Day thoughts: Well, for a while I didn't think I'd make it, with Mrs. Brown's gastritis flaring up this morning and Timmy Jenkins getting his finger caught in a car door. But now—with luck—we'll have a nice, quiet dinner. The turkey smells great and the kids are anxious to dive in. And so am I. Now to carve some firm white meat. Oh, oh, the phone . . . a patient on the wire . . . oh well, cold turkey isn't bad. . . . For more about cover see page 234a.



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1 Harrisson, J.W.E.; Packman, E.W., and Abbott, D.D.: J. Am. Pharm. Assn. (Scient. Ed.) *48*:50-56 (Jan.) 1959.

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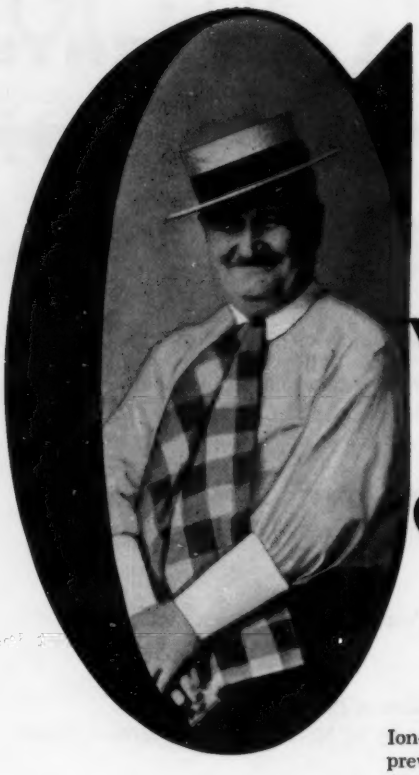
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References: **1.** Tandowsky, R. M.: Personal communication. **2.** Parsons, W. B.: *Curr. Therapeut. Res.* 2:137 (May) 1960. **3.** Thompson, C. E.: Personal communication. **4.** Biben, L. H.; Kurstin, W., and Protas, M.: Personal communication. **5.** Hobbs, T. G.: Personal communication.

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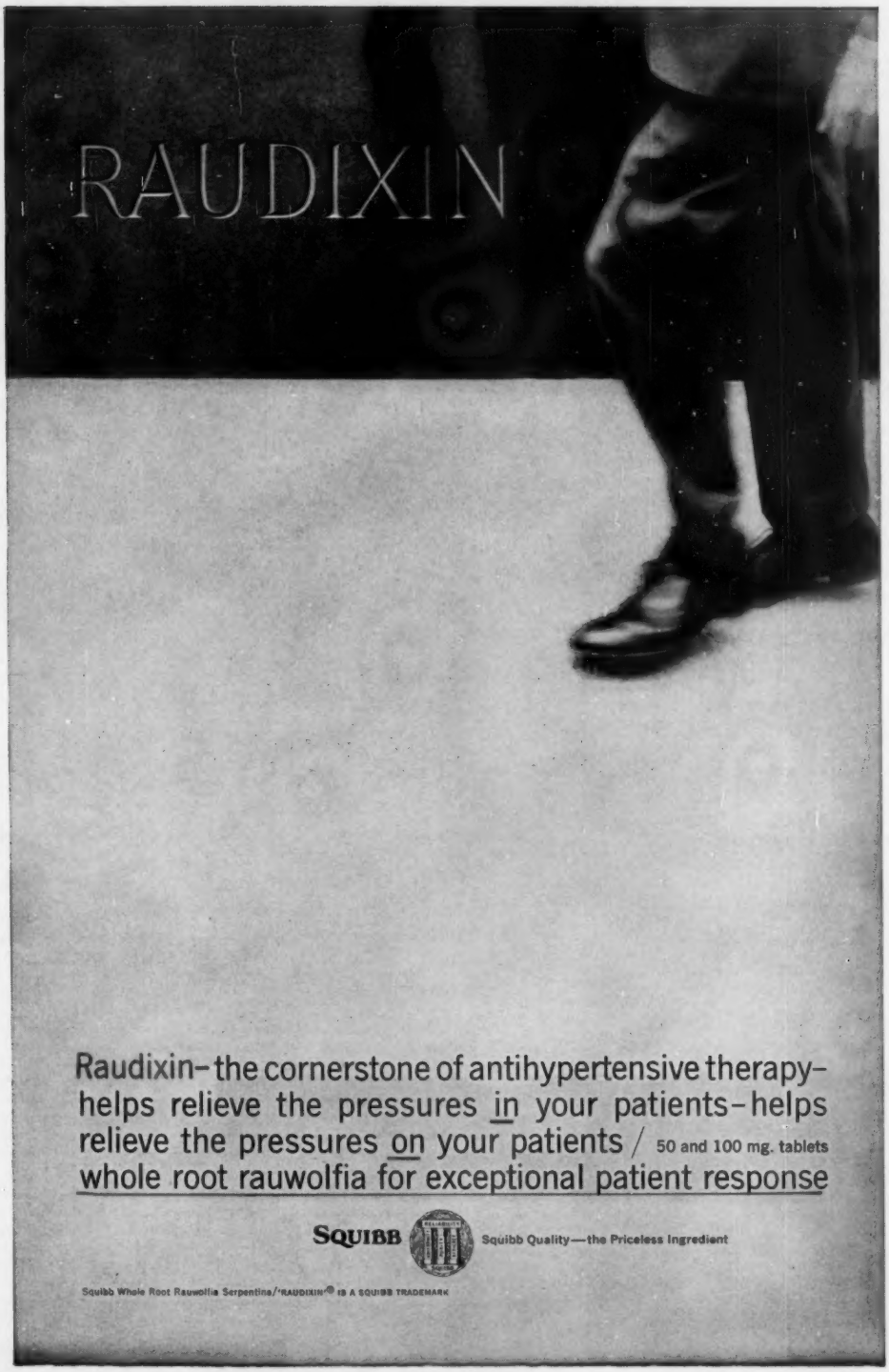
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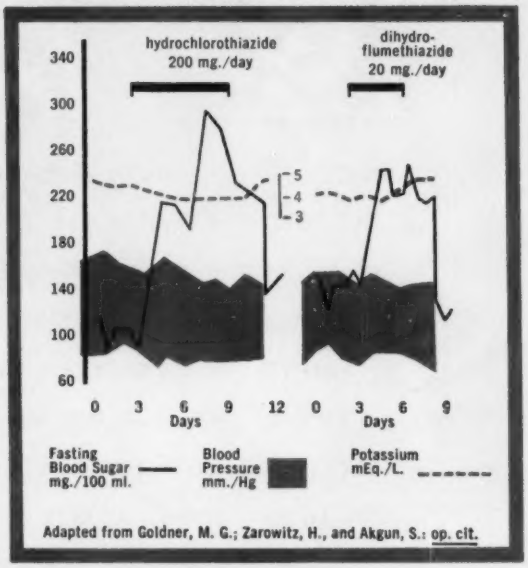
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Source:
Goldner, M. G.; Zarowitz, H., and Akgun, S.: New England J. Med. *262*:403, 1960.

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1. A.M.A. Council on Drugs: New and Nonofficial Drugs 1960, Philadelphia, J. B. Lippincott Company, 1960, p. 363.
2. Friend, D. G., and Hamlin, J. T. III: in Modell, W.: Drugs of Choice 1960-1961, St. Louis, The C. V. Mosby Company, 1960, pp. 270-271.
3. Batterman, R. C., et al.: Clinical Re-evaluation of Daytime Sedatives, Postgrad. Med. 26:502-509 (Oct.) 1959.

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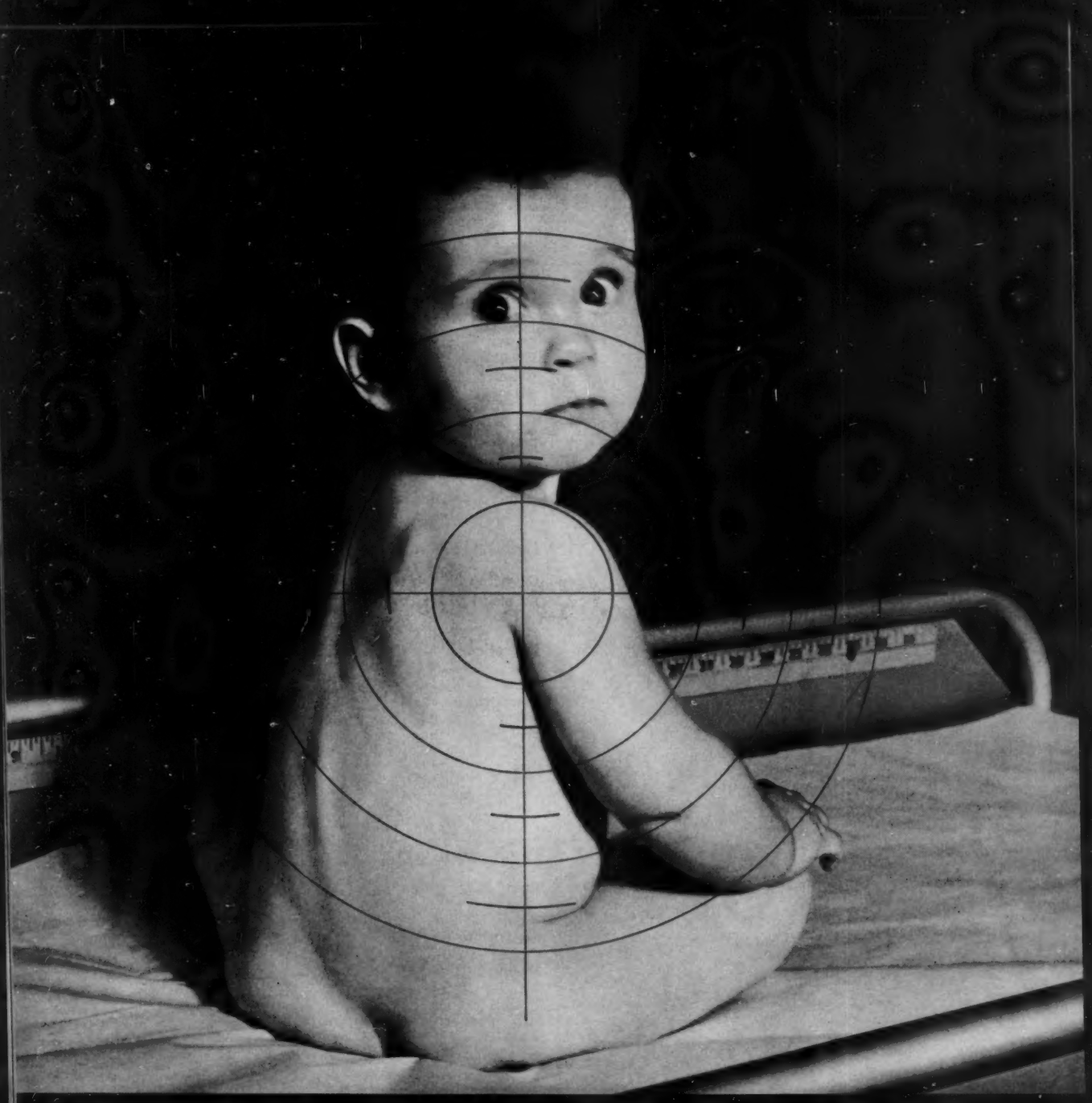
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Weight Control

Bamadex 210a, 220a, 224a, 228a
Prelu-Vite 171a

all this... and only 77 calories

ESSENTIAL NUTRIENTS IN ONE EGG

Protein.....6.1 Gm.
Carbohydrate.....0.3 Gm.
Fat.....5.5 Gm.
(Unsaturated Fatty Acids.....3.6 Gm.)
Also present, vitamins A, D, E, K, B_1, B_2, B_6, B_{12}, Pantothenic Acid, Niacin, Folic Acid, Biotin, and many essential minerals.

Few foods known to man provide a higher ratio of nutrient value to calories than do eggs.

The quality of egg protein is a standard against which the proteins of other foods are measured.

The cholesterol and fatty acid contents of two eggs—traditionally a widely preferred breakfast—fit well into the daily diet, even when lessened fat intake is recommended.

Because of their high nutrient value, their easy digestibility, compatibility, and nutritional complementation of other foods, eggs are included in the recommended dietary* for many conditions in which diet adjustment is indicated.

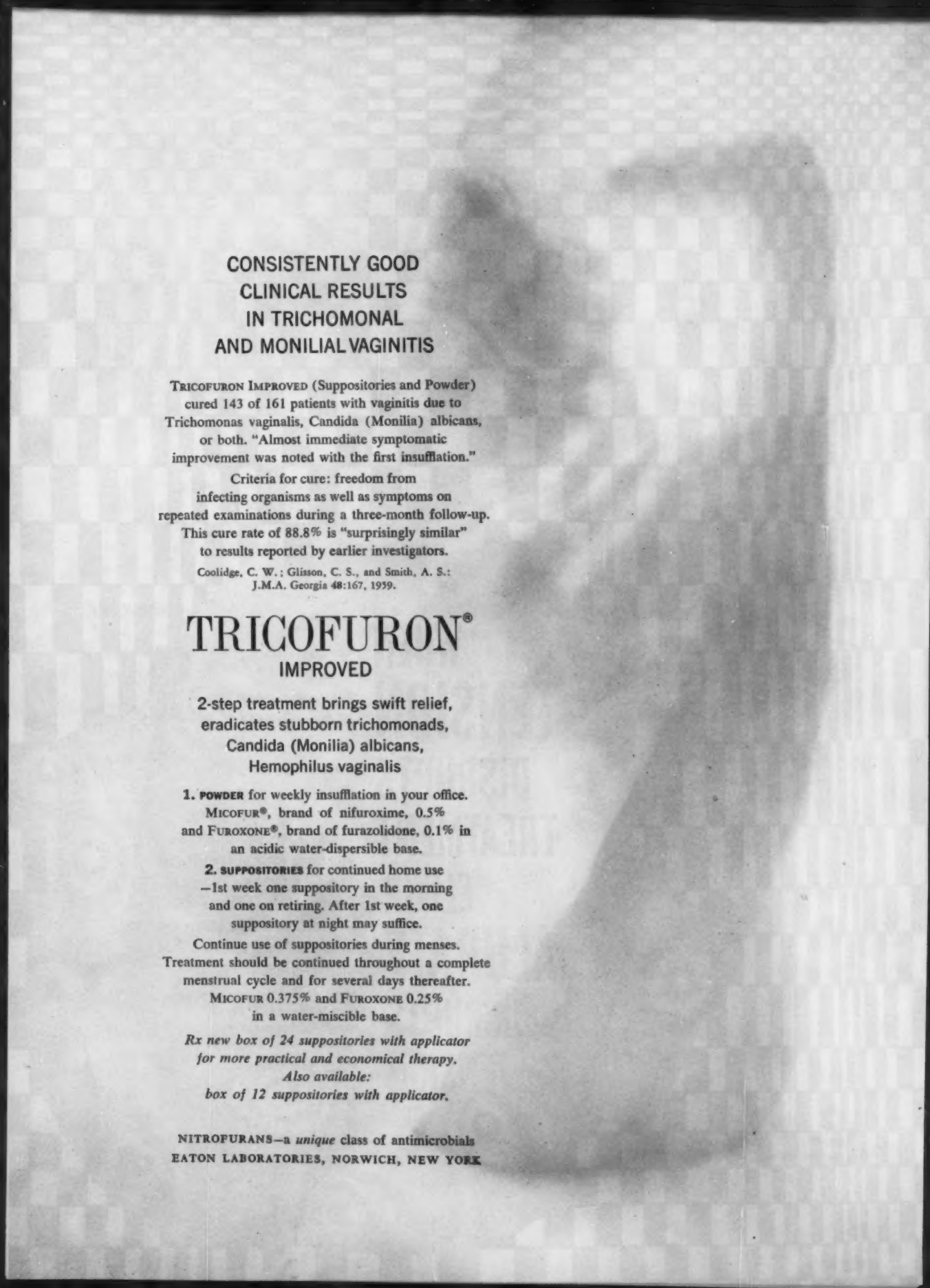
Eggs are listed in the daily recommendations of nourishing liquid, restricted fiber, low sodium, restricted purine, low-calorie, and many other diets.

**Recommended in the diet manuals of teaching institutions.*

The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.



Poultry and Egg National Board
8 South Michigan Avenue, Chicago 3, Illinois



CONSISTENTLY GOOD CLINICAL RESULTS IN TRICHOMONAL AND MONILIAL VAGINITIS

TRICOFURON IMPROVED (Suppositories and Powder) cured 143 of 161 patients with vaginitis due to Trichomonas vaginalis, Candida (Monilia) albicans, or both. "Almost immediate symptomatic improvement was noted with the first insufflation."

Criteria for cure: freedom from infecting organisms as well as symptoms on repeated examinations during a three-month follow-up. This cure rate of 88.8% is "surprisingly similar" to results reported by earlier investigators.

Coolidge, C. W.; Glisson, C. S., and Smith, A. S.: J.M.A. Georgia 48:167, 1959.

TRICOFURON®

IMPROVED

2-step treatment brings swift relief, eradicates stubborn trichomonads, Candida (Monilia) albicans, Hemophilus vaginalis

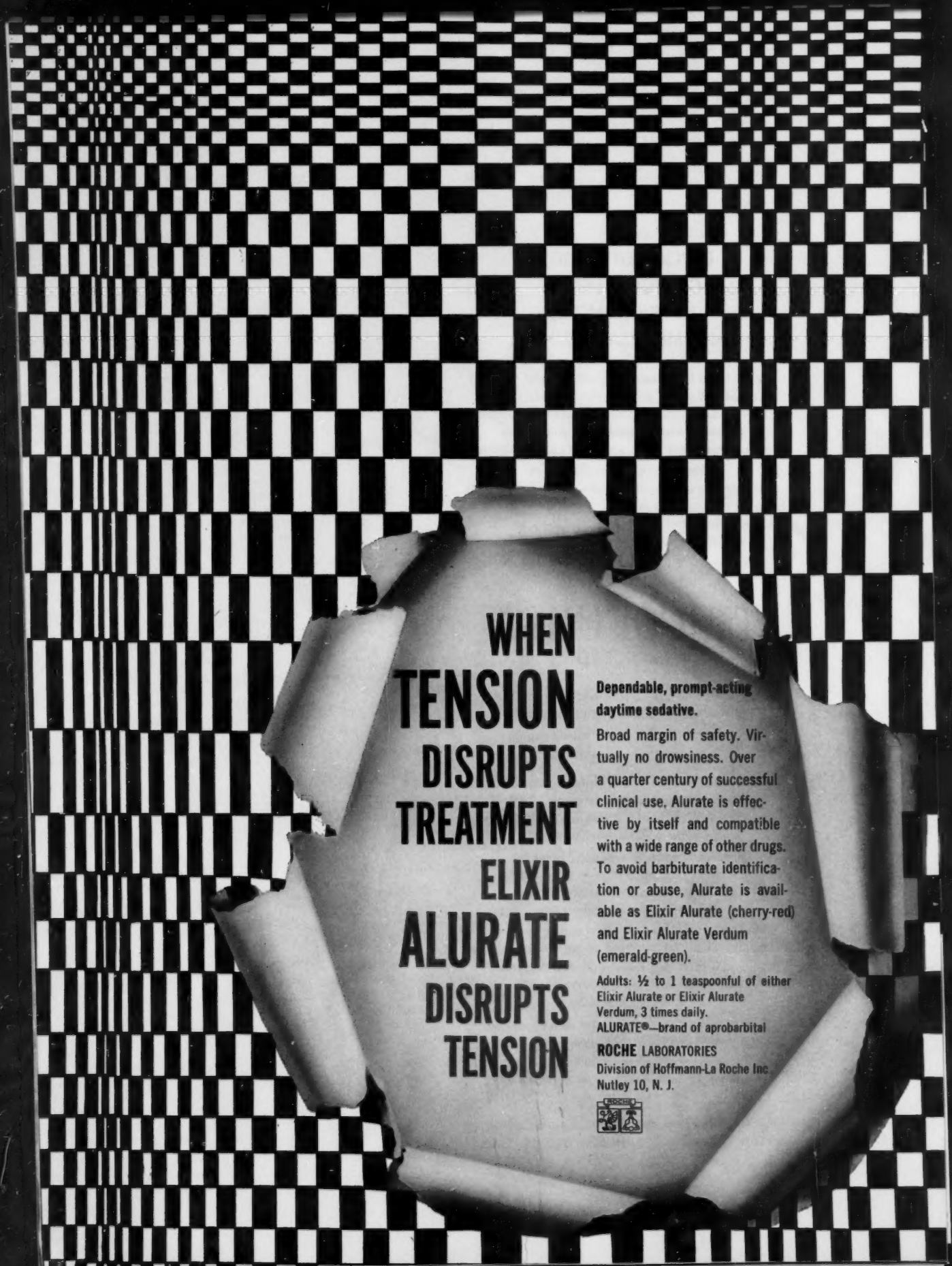
1. **POWDER** for weekly insufflation in your office. MICOFUR®, brand of nifuroxime, 0.5% and FUROXONE®, brand of furazolidone, 0.1% in an acidic water-dispersible base.

2. **SUPPOSITORIES** for continued home use —1st week one suppository in the morning and one on retiring. After 1st week, one suppository at night may suffice.

Continue use of suppositories during menses. Treatment should be continued throughout a complete menstrual cycle and for several days thereafter. MICOFUR 0.375% and FUROXONE 0.25% in a water-miscible base.

Rx new box of 24 suppositories with applicator for more practical and economical therapy.
Also available:
box of 12 suppositories with applicator.

NITROFURANS—a *unique* class of antimicrobials
EATON LABORATORIES, NORWICH, NEW YORK


WHEN
TENSION
DISRUPTS
TREATMENT
ELIXIR
ALURATE
DISRUPTS
TENSION
Dependable, prompt-acting daytime sedative.
Broad margin of safety. Virtually no drowsiness. Over a quarter century of successful clinical use. Alurate is effective by itself and compatible with a wide range of other drugs. To avoid barbiturate identification or abuse, Alurate is available as Elixir Alurate (cherry-red) and Elixir Alurate Verdum (emerald-green).
Adults: ½ to 1 teaspoonful of either Elixir Alurate or Elixir Alurate Verdum, 3 times daily.
ALURATE®—brand of aprobarbital
ROCHE LABORATORIES
Division of Hoffmann-La Roche Inc.
Nutley 10, N. J.



Off the Record...

Contributions describing actual and unusual happenings in your practice are welcome. For obvious reasons only your initials will be published. An imported sculptulite figurine . . . an amusing caricature of a physician . . . will be sent in appreciation for each accepted contribution.

Wait for the Next Race Meet

Sometime ago a colleague and I made our annual visit to the local racetrack. It was a Saturday afternoon, warm and sunny, and we both proceeded to luxuriate in the relaxing surroundings. Our busy practices were forgotten for the moment.

We put token bets on each race just to maintain interest; whether we won or lost was of little concern. But on the last race I decided to "plunge," to put $5 on a longshot.

As I stood in the $5 line, I noticed a man just leaving the window and counting a fistful of $5 tickets. As he came abreast of me he looked up and our eyes met.

He was one of my patients, a fellow who never seemed able to pay his bills on time and had owed me $50 for the past year.

"Hi Doc," he said, a little sheepishly. "Now you can see why I have trouble paying my bills. But if this horse comes in I'll pay you right away."

The horse didn't come in.

The patient still hasn't paid his bill.

Anonymous

Next Time Try Esperanto

A young and pretty French-Canadian woman presented herself with a vaginal discharge. The patient's background gave me a grand opportunity to use my knowledge of French. Actually, my ability in this field is nothing to rave about, and I carried on the interview in a combination of English and broken French. I advised her to take douches and to return for another examination in two weeks.

When she returned I found that her condition had not improved. I asked her if she douched lying down or sitting up. She found the question uproarious, almost choking with laughter.

In my best French I asked why the laughter, and she said you don't douche lying or sitting; you do it standing.

After we had finally cleared the language barrier, she told me that "douche" means to shower. Following my French-English instructions, she had been pouring the medication over her head and body during the two-week period.

We both laughed—but the joke was really on me.

M. S., M.D.
Levittown, N. Y.

Important Disclosure

As I was taking a urological history from a male patient I asked him if he had to get up very often at night.

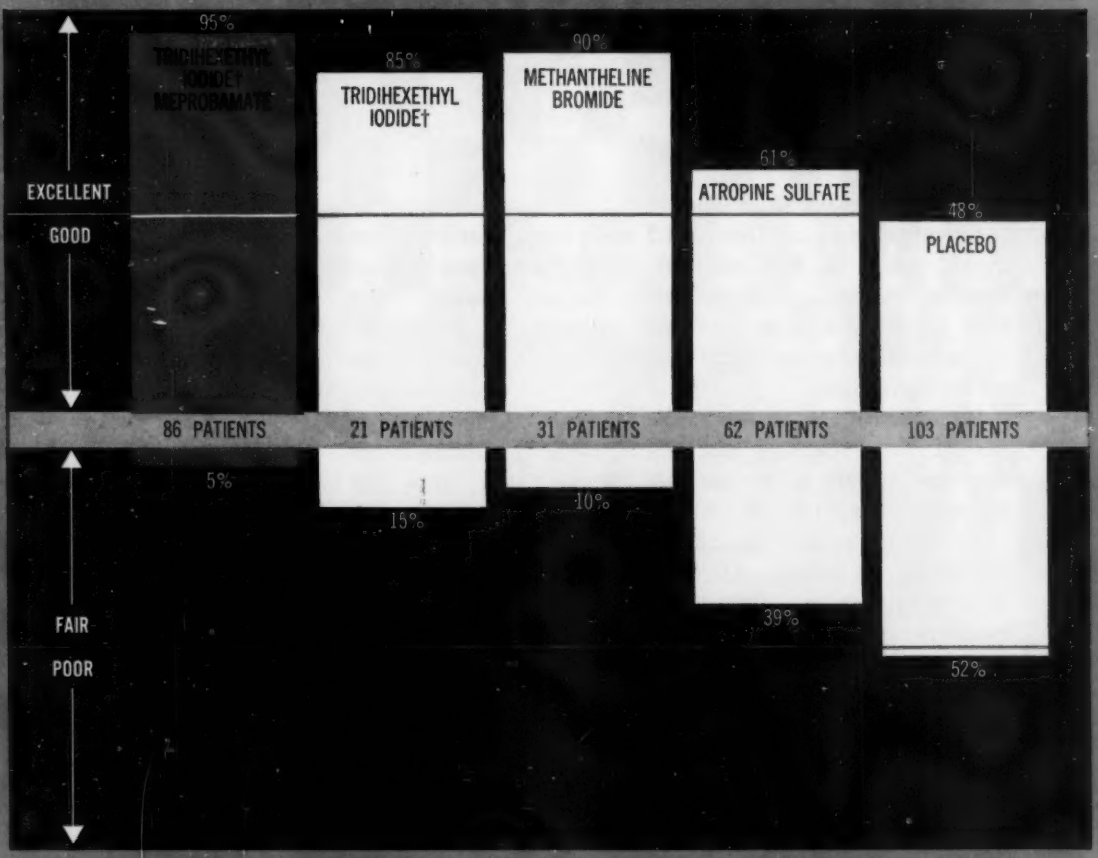
He considered the question a moment, then said: "No, only to close the windows when it rains."

R. L. B., M.D.
Elkhart, Ind.

Concluded on page 29a

clinically proven efficacy..

in relieving tension . . . curbing hypermotility and excessive secretion in G. I. disorders



PATHIBAMATE combines two highly effective and well-tolerated therapeutic agents:

Meprobamate—widely accepted tranquilizer and

PATHILON tridihexethyl chloride—anticholinergic noted for its effect on motility and gastrointestinal secretion with few unwanted side effects.

Contraindications: glaucoma, pyloric obstruction, and obstruction of the urinary bladder neck.

Two available dosage strengths permit adjusting therapy to the G.I. disorder and degree of associated tension.

Where a minimal meprobamate effect is preferred . . .
PATHIBAMATE-200 Tablets: 200 mg. of meprobamate; 25 mg. of PATHILON

Where a full meprobamate effect is preferred . . .
PATHIBAMATE-400 Tablets: 400 mg. of meprobamate; 25 mg. of PATHILON

Dosage: Average oral adult dose is 1 tablet t.i.d. at mealtime and 2 tablets at bedtime.

Pathibamate® 400 200

meprobamate with PATHILON® tridihexethyl chloride Lederle

.clinically proven safety

The efficacy of PATHIBAMATE has been confirmed clinically in duodenal ulcer, gastric ulcer, intestinal colic, spastic and irritable colon, ileitis, esophageal spasm, anxiety neurosis with gastrointestinal symptoms, and gastric hypermotility.

Pictured are the results obtained with the PATHILON (tridihexethyl iodide)—meprobamate combination† in a double-blind study of 303 ulcer patients, extending over a period of 36 months.* They clearly demonstrate the efficacy of **PATHIBAMATE** in controlling the symptoms.

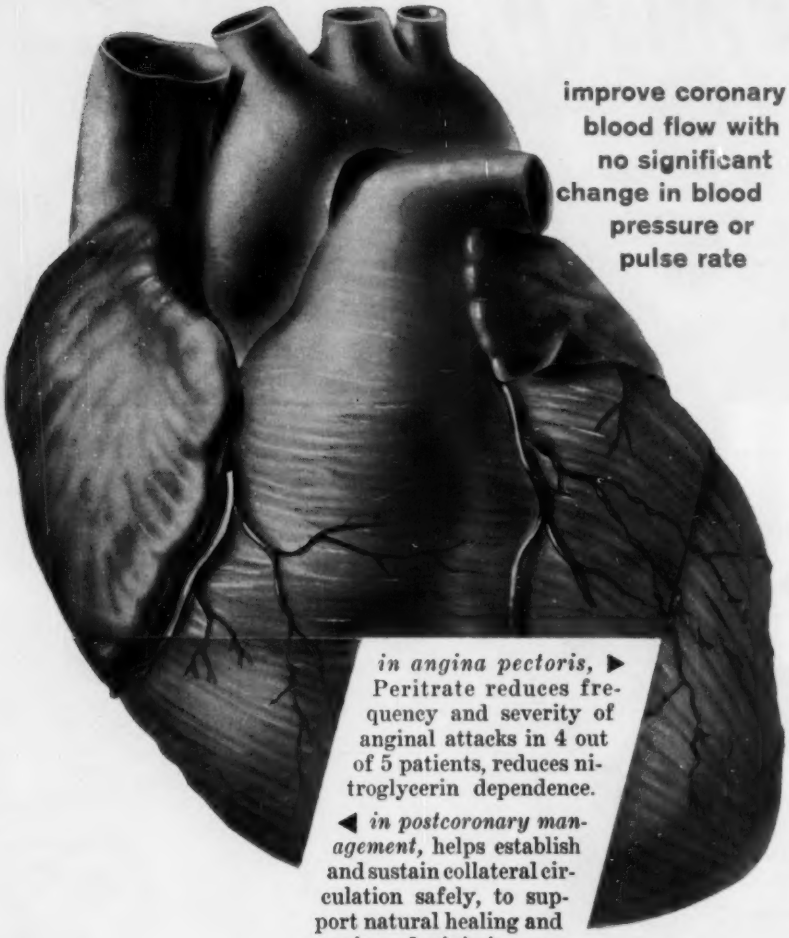
SIDE EFFECTS	TRIDIHEXETHYL IODIDE† MEPROBAMATE	TRIDIHEXETHYL IODIDE†	METHANTHELINE BROMIDE	ATROPINE SULFATE	PLACEBO
DRY MOUTH	1%	5%	72%	46%	5%
STOMATITIS	1%	0%	28%	14%	0%
VISUAL DISTURBANCES	0%	0%	50%	34%	1%
URINARY RETENTION	0%	0%	18%	11%	1%
DROWSINESS	20%	0%	0%	0%	0%
COMPLICATIONS OR SURGERY					
HEMORRHAGE	0%	9%	3%	9%	10%
PERFORATION	0%	0%	0%	6%	0%
OPERATION	0%	5%	5%	14%	2%
RECURRENCES					
NONE	28%	23%	25%	17%	26%
FEWER AND MILDER	67%	62%	52%	37%	24%
SAME OR MORE	5%	15%	23%	46%	50%

*Atwater, J. S., and Carson, J. M.: Therapeutic Principles in Management of Peptic Ulcer. Am. J. Digest. Dis. 4:1035 (Dec.) 1959.

†PATHILON is now supplied as tridihexethyl chloride instead of the iodide, an advantage permitting wider use, since the latter could distort the results of certain thyroid function tests.

Lederle LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

control the tension — treat the trauma



improve coronary blood flow with no significant change in blood pressure or pulse rate

in angina pectoris, ▶ Peritrate reduces frequency and severity of anginal attacks in 4 out of 5 patients, reduces nitroglycerin dependence.

◀ *in postcoronary management,* helps establish and sustain collateral circulation safely, to support natural healing and repair, and minimize any ensuing anginal attacks. Gradual prolonged action virtually eliminates nitrate headaches.

basic in coronary artery disease

Peritrate®

brand of pentaerythritol tetranitrate

WARNER CHILCOTT

MORRIS PLAINS, N.J.

NEW form available:

Peritrate with Phenobarbital Sustained Action

1 tablet on arising and 1 tablet 12 hours later.

GPO 3

Off the Record...

Concluded from page 25a

Could Happen to Anyone

This happened several years ago, when I was first starting out in practice.

It was about 10 P.M. when I got a call from one of my few patients. She was running a fever, she said, had a headache and diarrhea. "I'll be right over," I said, taking down her address.

It was about a ten-block drive to her apartment house and when I got there I had great difficulty finding a place to park. Finally, after circling blocks for 15 minutes, I found a spot. Then I rushed off to treat my patient.

When I returned to the street again I slowly became aware of a disturbing thought. I realized that I had been so intent on reaching and treating my patient that I hadn't taken notice of where I had parked. I could only remember it was several blocks from where my patient lived.

As a result I wandered the dark streets for the next hour looking for my car. Finally I gave up and hailed a cab.

Next morning I returned to the area and eventually found my car.

I also found, attached to a windshield wiper, a freshly filled-out parking ticket.

A. F., M.D.
New York, N.Y.

Surprise!

On my 50th birthday I received a small package from an elderly patient on whom I had performed major surgery. The package consisted of layer upon layer of wrappings. As I peeled them off I wondered what was inside. At first I thought in terms of a cigar, then a urine specimen. At last I had the article unwrapped — a handsome fountain pen of the kind I use daily.

What a pleasant surprise. It was with great enthusiasm that I sat down and wrote an appropriate thank you note.

It wasn't until sometime later that I felt greatly chagrined and ready to accept absent-mindedness as part of the condition of having lived half a century. For I realized that I had dutifully thanked my patient for the same pen I had purchased a few months before and had left in her home during a professional visit.

G. H. M., M.D.
Minneapolis, Minn.

Ah, There's the Rub!

One of my "old timer" patients, a woman who in the past had bought most of her medicines from traveling salesmen, developed a goiter for which iodine was indicated. It was explained to the patient that she must take the prescribed number of drops of the Lugol's solution three times a day.

When she returned, however, she was not any better, her gland not any smaller. She said, with some emphasis, that she had used much more of the medicine than was prescribed.

On further questioning it was discovered that she had been rubbing the medicine on her gland, just as she had always done with the salves and balms bought from salesmen to relieve muscle aches, etc. It was inconceivable to her that she could get better by taking a medicine internally.

Nevertheless, she followed my instructions and in a short while was amazed at the excellent results.

J. H. H., M.D.
Lewisville, N. C.

Loose Talk

One of my patients in the hospital ward was especially restless and anxious. He was fretful, and his progress was not as good as he would have liked. Each morning he would greet me with several new complaints.

The patient's talkative roommate, a fellow who always had a word of encouragement for each of us, finally said one morning, "Doc, I know what's wrong with your patient—he's got nervous prostitution!"

F. M. S., M.D.
Muncie, Ind.



A "fitting" concern for the new mother ...time



A new baby in the family, whether the first or the fourth, makes it necessary for the whole family, particularly the mother, to adjust. For this, time is needed.

Your postpartum patient looks to you for advice on the best way to plan ahead.

Security—two ways

She experiences special physical comfort when you prescribe either the regular RAMSES® Diaphragm or the new RAMSES BENDEX,® an arc-ing type diaphragm.

The regular RAMSES Diaphragm, suitable for most women, is made of pure gum rubber, with a dome that is unusually light and velvet smooth. The rim, encased in soft rubber, is flexible in all planes permitting complete freedom of motion.

For those women who prefer or require an arc-ing type diaphragm, the new RAMSES BENDEX embodies all of the superior features of the conventional RAMSES Diaphragm, *together with the very best hinge mechanism contained in any arc-ing diaphragm.* It thus affords lateral flexibility to supply the proper degree of spring tension without discomfort.

For added protection—
RAMSES "10-Hour" Vaginal Jelly*

To give your patient the full protection of the diaphragm and jelly method—at least 98 per cent effective[1]—RAMSES Jelly is uniquely suited for use with either type of RAMSES Diaphragm. It is not static, but flows freely over the diaphragm rim to add lubrication and form a sperm-tight seal maintained for *ten full hours.* It is nonirritating and nontoxic.

You can now prescribe a complete unit with either type of diaphragm. RAMSES "TUK-A-WAY"® Kit #701 contains the regular RAMSES Diaphragm with Introducer and a 3-ounce tube of RAMSES Jelly; the #703 Kit contains the RAMSES BENDEX Diaphragm and Jelly. Each in attractive zippered case. At all prescription pharmacies.

Reference: 1. Tietze, C.: Proceedings, Third International Conference Planned Parenthood, 1953.

RAMSES, BENDEX, and "TUK-A-WAY" are registered trademarks of Julius Schmid, Inc.

*Active agent, dodecaethyleneglycol monolaurate 5%, in a base of long-lasting barrier effectiveness.

Julius Schmid, Inc.
423 West 55th Street, New York 19, N. Y.

Ramses® *Diaphragm and Jelly*



ATARAX ENCOMPASSES MORE PATIENT NEEDS...LETS YOU CHART A SAFER, MORE EFFECTIVE COURSE TO TRANQUILITY

ATARAX has a wide range of flexibility . . . from mild adult tensions and anxieties to full-blown alcoholic episodes . . . from the behavior disorders of childhood to the emotional problems of old age. Why? Because it gives you maximum adaptability of dosage . . . works quickly and predictably . . . is unsurpassed in safety.

ATARAX offers extra pharmacologic actions especially useful in certain troublesome conditions. It is antihistaminic and mildly antiarrhythmic, does not stimulate gastric secretions. Hence it is well suited to the needs of your allergic, cardiac and ulcer patients.

Have you discovered all the benefits of ATARAX?

Dosage: Adults, one 25 mg. tablet, or one tbsp. Syrup q.i.d. Children, 3-6 years, one 10 mg. tablet or one tsp. Syrup t.i.d.; over 6 years, two 10 mg. tablets or two tsp. Syrup t.i.d.

Supplied: Tiny 10 mg., 25 mg., and 100 mg. tablets, bottles of 100. Syrup, pint bottles. Parenteral Solution: 25 mg./cc. in 10 cc. multiple-dose vials; 50 mg./cc. in 2 cc. ampules. Prescription only.

Complete bibliography available on request.

ATARAX®

(BRAND OF HYDROXYZINE)

PASSPORT TO TRANQUILITY



Rx PFIZER

New York 17, N. Y.
Division, Chas. Pfizer & Co., Inc.
Science for the World's Well-Being™

VITERRA® for vitamin-mineral supplementation
• capsules • tastitabs®
• therapeutic capsules

RESPONSE IN
PERIPHERAL VASCULAR DISEASE

CASE HISTORY†



White male, age 57. Ischemic ulcers on dorsum and second toe of left foot, arteriosclerotic heart disease with congestive failure, and pneumonitis. General condition improved with bed rest, salt restriction, digitalis and diuretics. *No improvement of ulcers despite conventional peripheral vasodilators. Amputation of foot was contemplated.*

With CYCLOSPASMOL, 200 mg. q.i.d., marked improvement in ulcer crater with appearance of granulation tissue within 3 weeks. No effect on toe, which was amputated. Continued therapy with CYCLOSPASMOL (and prophylactic antibiotic dressings) produced smooth healing.

†Report and photographs courtesy I.M. Alpher, M.D., Washington, D.C.

CYCLOSPASMOL®

Cyclandelate, Ives-Cameron

- Effective orally
- Musculotropic[1]—acts directly on the arterial wall to increase blood flow
- Indicated in both occlusive and vasospastic disorders
- Increases walking tolerance
- Relieves pain in extremities
- Promotes healing of leg ulcers
- Restores color and warmth to extremities

Literature and professional samples available on request.

1. Council on Drugs, New and Nonofficial Drugs, J.A.M.A. 170:1670 (Aug. 1) 1959.

*Trademark

IVES / IVES-CAMERON COMPANY
New York 16, N.Y.

Healed ulcer area 18 months after initiation of therapy.





Diagnosis, Please!

Edited by Maxwell H. Poppel, M.D., F.A.C.R., Professor of Radiology, New York University College of Medicine and Director of Radiology, Bellevue Hospital Center

WHICH IS YOUR DIAGNOSIS?

1. Normal
2. Aneurysm
3. Tumor

Answer on page 232a





"be sure to make up more **TRICHOTINE** solution for our examining room."

You can see for yourself the efficient detergent action of Trichotine solution in reducing promptly a cervical plug (using a saturated cotton pledget), or washing away the "cheesy" exudate of monilia.

TRICHOTINE is just as effective for therapeutic irrigation by your patient at home

The same qualities – detergency*, antisepsis, healing – make Trichotine ideal for the treatment of cervico-vaginitis and leukorrheas, alone or in conjunction with other antimicrobials. In the itching, burning, and foul odor of non-specific vaginitis and leukorrhea the action of Trichotine is immediate and gratifying to the patient.

The more you expect of a douche, the more you will use Trichotine in the office and prescribe it for home irrigation, and recommend it as well for postmenstrual and postcoital hygiene.

*SURFACE TENSION: TRICHOTINE 34 DYNES; VINEGAR 60 DYNES; TAP WATER 70 DYNES.

The modern detergent douche

TRICHOTINE®

THE FESLER COMPANY, INC. 375 Fairfield Avenue, Stamford, Conn.

a new antitussive molecule

NON-NARCOTIC

ULO®

4 to 8 hour sustained cough suppression



SYRUP

Chlophedianol HCl

cough suppressant action	equal to	narcotics
duration of action	greater than	narcotics
side actions	less than	narcotics

presenting many other advantages

Riker

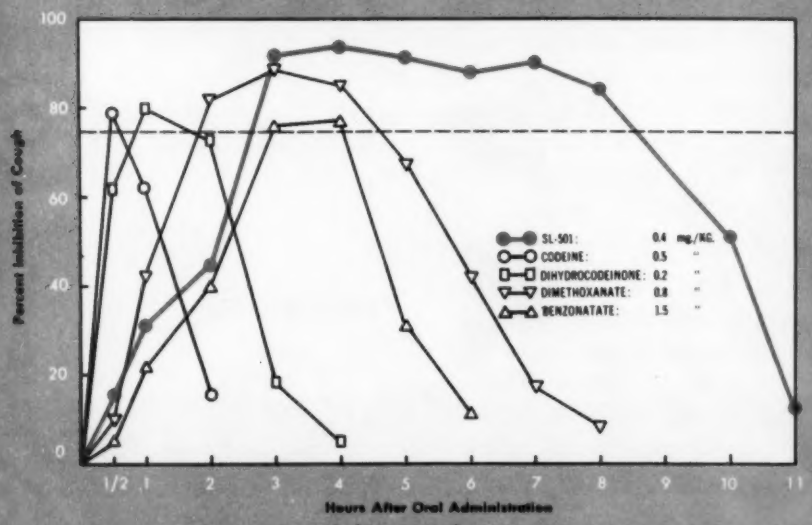
NON-NARCOTIC

ULO®

Chlophedianol HCl

To date, the narcotic cough suppressants have been the most powerful and efficient agents for the control of cough.

ULO, a non-narcotic antitussive, is equal to the narcotics in power to suppress cough, without the disadvantages inherent in their use. A major advantage of ULO is its prolonged duration of action.



A comparison of ULO (SL-501) and other antitussive agents in inhibiting experimental coughs in animals

Mean per cent inhibition of cough in dogs following oral administration of therapeutically equivalent doses of ULO and other antitussive agents. The horizontal dotted line represents threshold of maximum effectiveness, arbitrarily taken at 75% suppression of counted coughs. Note that the duration of maximum effectiveness of a single dose of ULO is 6 hours, 24 times longer than that of codeine. Peak effectiveness of ULO is not reached until 2 or 3 hours after administration, but the maximum antitussive action lasts at least 6 hours.

Chen, J. Y.; Biller, H. F., and Montgomery, E. G., Jr.: J. Pharmacol. & Exper. Therap. *128*:384, 1960.

CLINICAL RESULTS WITH ULO

in 1078 patients observed by 50 U.S. investigators, 46 of whom were chest physicians

Diagnostic Category	Number of Patients	Results			
		Good to Excellent	Fair	Poor	Not Specified
Upper Respiratory Infection	521	357	88	57	19
Bronchitis	398	309	42	38	9
Pneumonia	53	44	4	5	0
Postnasal Drip	48	32	9	3	4
Tracheobronchitis	32	23	4	3	2
Croup	14	10	2	2	0
Pleurisy	12	11	0	1	0
Total Patients	**1078**	**788**	**149**	**109**	**34**
Total Patients Benefited		**86.2%**			

ADVANTAGES OF ULO

- **Uninterrupted sleep... bedtime dose usually carries patient through the night; especially important with children.**
- **Patient is alert and active... cough is suppressed without the dulling effects of narcotics; cough fatigue is prevented with 4-8 hour spans of effective cough suppression.**
- **Easy for patient to raise sputum... bronchodilating action lessens airway resistance.**
- **Soothes irritated membranes... mild topical anesthetic effect.**
- **Freedom from constipation or laxation... no effect on intestinal motility.**
- **Maintains effectiveness... no development of tolerance or habituation.**
- **Patient has strength to raise sputum when necessary... fatigue due to cough exhaustion is prevented.**
- **Exceptionally well tolerated by children... no narcotic overlay.**
- **Compatible with all other medications... liquefying agents, antihistamines, antibiotics and analgesics may all be co-administered with ULO.**
- **Nutrition and food enjoyment maintained... no appetite suppression, no nausea, no constipation, no gastric irritation, as with narcotics.**
- **Permits patient his maximum respiratory exchange... does not depress respiration.**
- **High therapeutic index.**

turn page for indications and dosage information

ULO®

non-narcotic cough suppressant

SYRUP

indications

Upper respiratory infections
Common cold
Influenza
Pneumonia
Bronchitis
Tracheitis
Laryngitis
Croup
Pertussis
Pleurisy

safety

There are no known contraindications. Side effects occur only occasionally and have been mild. Nausea and dizziness have occurred infrequently; vomiting and drowsiness rarely.

chemistry and pharmacology

ULO is known chemically as alpha-(2-dimethylaminoethyl)-o-chlorobenzhydrol hydrochloride. It acts in a manner similar to that of narcotics, but with a longer span of peak activity. In addition, ULO produces mild local anesthetic and bronchial antispasmodic effects.

dosage

Adults: One teaspoonful (25 mg.) 3 or 4 times daily as required.

Children: 6-12 years of age, ½ to one teaspoonful (12.5 to 25 mg.) 3 or 4 times daily as required.

2-6 years of age, ½ teaspoonful (12.5 mg.) 3 or 4 times daily as required.



availability

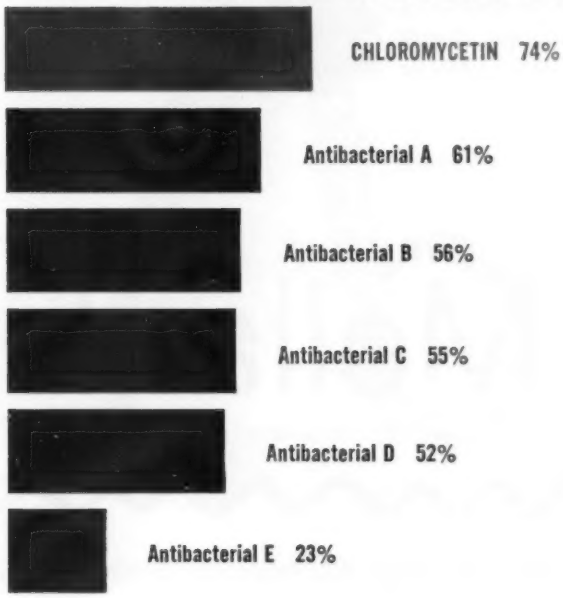
ULO Syrup, 25 mg. per teaspoonful, in bottles of 12 fluid ounces.

Riker Northridge, California

4,860 CULTURES... 74% SENSITIVE TO CHLOROMYCETIN®

(chloramphenicol, Parke-Davis)

IN VITRO SENSITIVITY OF 4,860 GRAM-POSITIVE AND GRAM-NEGATIVE PATHOGENS TO CHLOROMYCETIN AND TO FIVE OTHER ANTIBACTERIALS*



*Adapted from Goodier, T. E. W., & Parry, W. R.: *Lancet* 1:356, 1959.

CHLOROMYCETIN (chloramphenicol, Parke-Davis) is available in various forms, including Kapseals® of 250 mg., in bottles of 16 and 100.

CHLOROMYCETIN is a potent therapeutic agent and, because certain blood dyscrasias have been associated with its administration, it should not be used indiscriminately or for minor infections. Furthermore, as with certain other drugs, adequate blood studies should be made when the patient requires prolonged or intermittent therapy.

PARKE, DAVIS & COMPANY · Detroit 32, Michigan

PARKE-DAVIS



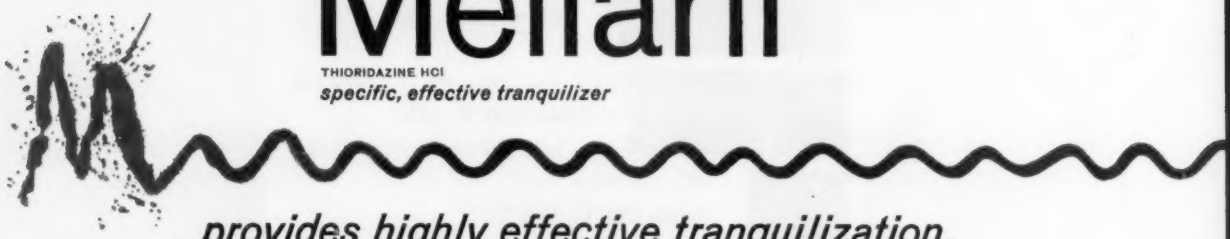
how does* Mellaril *differ from other potent tranquilizers?



Mellaril®

THIORIDAZINE HCl

specific, effective tranquilizer



provides highly effective tranquilization,
relieves anxiety, tension, nervousness,

but is virtually free of such toxic effects as

jaundice
Parkinsonism
blood dyscrasia
dermatitis

greater specificity of tranquilizing action results in fewer side effects



Virtual freedom of Mellaril from major toxic effects is due to greater specificity of tranquilizing action—divorced from such "diffuse" effects as anti-emetic action.

"A new phenothiazine derivative, thioridazine [Mellaril®], was used to treat 71 patients, most of whom were unduly agitated and disturbed due to hospitalization for medical or surgical conditions....The response to treatment was considered satisfactory in 83.4 per cent of patients....In agreement with the published results of other investigators, we believe that thioridazine shows a greater specificity of tranquilizing action and freedom from serious toxic effects when compared with some of the other phenothiazines."*

Supply: MELLARIL Tablets, 10 mg., 25 mg., 50 mg., 100 mg.

*David, N. A.; Logan, N. D., and Porter, G. A.: Evaluation of Thioridazine (Mellaril), a New Phenothiazine, in The Hospitalized Patient, A. M. & C. T. 7:364 (June) 1960.

SANDOZ



Coroner's Corner

A beautiful imported German apothecary jar will be sent to each contributor of an unusual case report.

A well-developed healthy boy, 18 years of age, reported to the hospital clinic complaining of an inflamed, swollen penis which badly needed relief.

The surgeon injected the swollen foreskin with a 2% procaine solution obtained from the clinic pharmacy. Shortly the patient went into shock and convulsions, and died.

The necropsy revealed an extreme pulmonary congestion, cardiac dilatation and myocardial cyanosis. Blood chemistry: N.P.N.: 54 mgms; glucose, 350 mgms; leucocyte count, 13,300. Chemical analysis positive for procaine in the spinal fluid.

What were the trigger mechanisms in this instance that caused death so unexpectedly? The procaine solution from the pharmacy was tested: administered to rabbits, it killed them quickly by convulsive seizures. Freshly prepared sterile procaine did not.

It was reasonable to conclude that this patient was killed by toxic procaine solution. The solution had become old and pyrogenic, had remained on the shelf too long. It may also have been improperly injected.

If procaine was the killer, then we have learned a valuable lesson. Only properly prepared, pyrogen-free solutions of procaine should ever be used in surgery. It should also



be cautiously administered to persons with nephritis or diabetes.

And lastly, though it shouldn't be necessary to add this caution, *there are people who evidentally are allergic or quite sensitive to procaine;* it should be used with considerable respect and careful technique, properly supported by adrenalin or other antiallergic substances.

JACK C. NORRIS, M.D.
Atlanta, Georgia

Schering

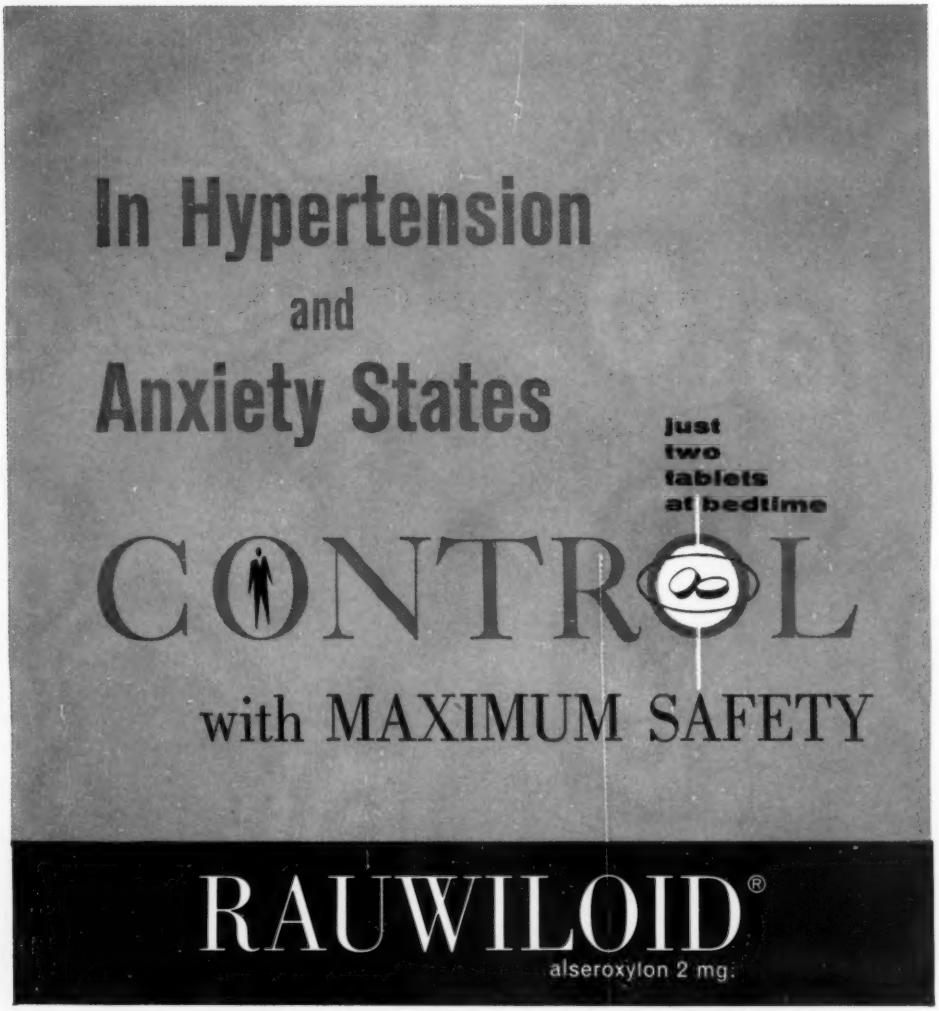
contact allergy? in any case, for allergic symptoms, the most widely used antihistamine is CHLOR-TRIMETON®

chlorprophenpyridamine maleate

S-2440

wool?





In Hypertension
Simplicity of control based on negligible incidence of serious side actions, simplicity of dosage, and applicability to a wide range of patients.

In Anxiety States
Rauwiloid is outstanding for its calming, nonsoporific sedation in anxiety states...with or without hypertension.

Compatible with other antihypertensive medications. Potentiates therapeutic action of more potent agents and permits their use in reduced and better tolerated dosage.

When more potent hypotensive action is needed, prescribe one of these convenient single-tablet combinations

Rauwiloid® + Veriloid®
alseroxylon 1 mg. and alkavervir 3 mg.

or

Rauwiloid® + Hexamethonium
alseroxylon 1 mg. and hexamethonium chloride dihydrate 250 mg.

Patients with severe hypertension often can be maintained on Rauwiloid alone after desired blood pressure levels are reached with combination medication.

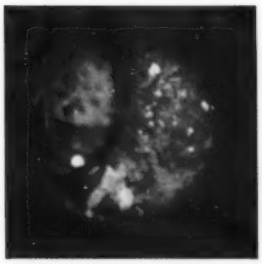
Riker Northridge, California

The Upjohn Company, Kalamazoo, Michigan

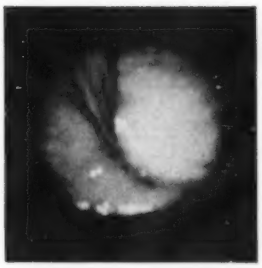
Upjohn

Excellent results in ulcerative colitis even where other steroids have failed

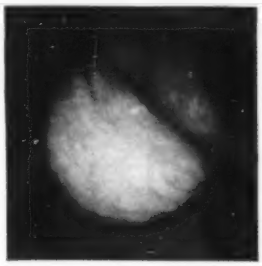
Proctoscopic view of the sigmoid in acute stage of ulcerative colitis



Proctoscopic view of the sigmoid following Depo-Medrol retention enemas for acute stage of ulcerative colitis



Proctoscopic view of sigmoid colon in a normal person



In controlling ulcerative colitis (recurrent, moderately severe, severe, and resistant), Depo-Medrol† can be given topically (by enema or rectal instillation) in requisitely large doses without producing significant side effects. Excellent results are obtainable even where other steroids have failed and improvement continues on oral Medrol maintenance dosage.

there is only one methylprednisolone, and that is

Medrol*



the corticosteroid that hits the disease, but spares the patient

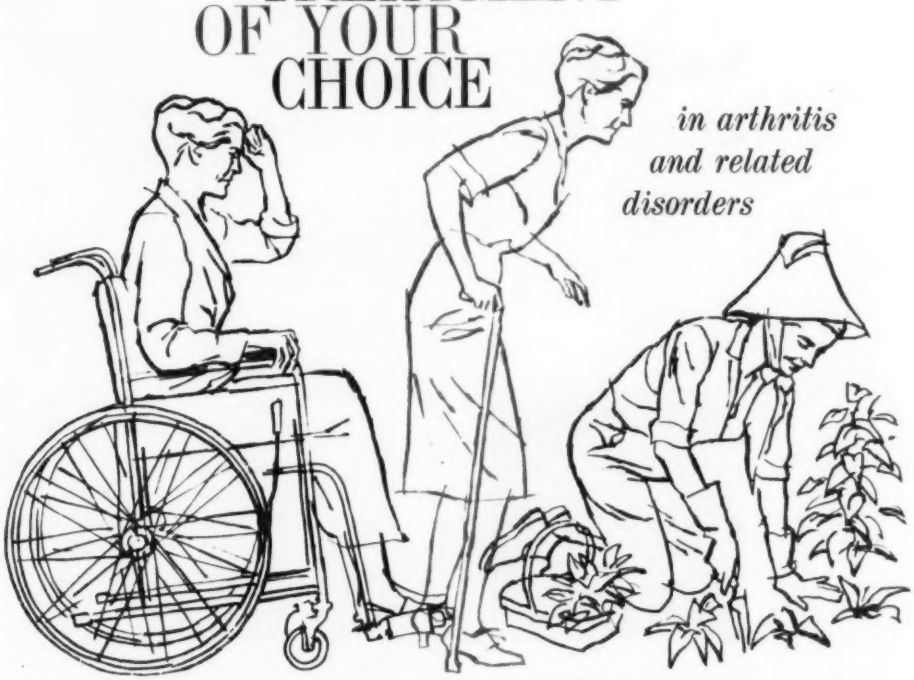
Medrol is supplied as 4 mg. tablets in bottles of 30, 100 and 500; as 2 mg. tablets in bottles of 30 and 100; and as 16 mg. tablets in bottles of 50. Depo-Medrol is supplied as 40 mg. per cc. injectable suspension in 1 cc. and 5 cc. vials. Mode of administration: Depo-Medrol (40-120 mg.) given as retention enema or by continuous drip three to seven times weekly.

*Trademark, Reg. U. S. Pat. Off. — methylprednisolone, Upjohn

†Trademark

THE TREATMENT OF YOUR CHOICE

in arthritis and related disorders



Three different combinations of prednisone, salicylates and buffers provide a choice of therapy to fit the individual needs of your patients, giving optimal relief of symptoms with minimal side effects.

For the acute, inflammatory stage

PREDSEM

Each white tablet contains:

Prednisone*	5 mg.
Calcium Pantothenate	10 mg.
Aluminum Hydroxide Gel, dried	0.2 Gm.
Magnesium Trisilicate	0.1 Gm.

Antacids and calcium pantothenate guard against gastric distress and peptic ulcer.

For the sub-acute, severe phase

SALCORT®-DELTA

Each yellow tablet contains:

Prednisone*	1 mg.
Potassium Salicylate	0.3 Gm.
Calcium Pantothenate	5 mg.
Calcium Ascorbate (Equiv. to 25 mg. Ascorbic Acid)	30 mg.
Calcium Carbonate	60 mg.
Aluminum Hydroxide Gel, dried	0.12 Gm.

Potassium salicylate compensates for reduced prednisone dosage. Buffered with protective antacids; fortified with ascorbic acid and calcium pantothenate.

For long-term maintenance

SALCEDROX®

Each orange tablet contains:

Sodium Salicylate	0.3 Gm.
Aluminum Hydroxide Gel, dried	0.12 Gm.
Calcium Ascorbate (Equiv. to 50 mg. Ascorbic Acid)	60 mg.
Calcium Carbonate	60 mg.

High salicylate dosage, buffered to prevent gastric disturbances.

*U.S. Pat. No. 2579479

Write for detailed literature and dosage schedules.

THE S. E. MASSENGILL COMPANY • BRISTOL, TENNESSEE • NEW YORK • KANSAS CITY • SAN FRANCISCO



saturation doses – the hard way!

Each of these food portions contains a saturation dose of one of the water-soluble B vitamins or C. The easy way to provide such quantities of these vitamins with speed, safety and economy is to prescribe Allbee with C. Recommended in pregnancy, deficiency states, digestive dysfunction and convalescence.

In each Allbee with C:		As much as:*
Thiamine mononitrate (B_1)	15 mg.	6.9 lbs. of fried bacon
Riboflavin (B_2)	10 mg.	31½ ozs. of liverwurst
Pyridoxine HCl (B_6)	5 mg.	2 lbs. of yellow corn
Nicotinamide	50 mg.	11 ozs. of roasted peanuts
Calcium pantothenate	10 mg.	¼ lb. of fried beef liver
Ascorbic acid (Vitamin C)	**250 mg.**	¾ lb. of cooked broccoli

*These common foods are among the richest sources of B vitamins and ascorbic acid. H. A. Wooster, Jr., Nutritional Data, 2nd Ed., Pittsburgh, 1954.

Allbee® with C

Robins

A. H. ROBINS COMPANY, INC.
RICHMOND 20, VIRGINIA

the beauty of these antitussives:



they help the cough remove its cause

These elegant antitussives comprise a group of significantly superior expectorants from which you may select the formula best suited for your coughing patient.

First of all, they have more in common than mere delectability to eye and palate: they all include *glyceryl guaiacolate*. This remarkable expectorant aids the coughing mechanism by increasing the secretion of Respiratory Tract Fluid,[1] which helps liquefy sputum,[1,3] makes bronchial and tracheal cilia more efficient,[1,2] and acts as a demulcent.[1,3-5] Through its effects, all four expectorants promote the natural purpose of the cough, which is to remove the irritants that cause it.[1,2]

In addition, the Robins antitussive armamentarium provides a choice of widely accepted drugs in various combinations with glyceryl guaiacolate for treating different kinds of coughs and associated symptoms. For antihistaminic effects, there is Dimetane® or prophenpyridamine; for bronchodilation and nasal decongestion, there are sympathomimetic agents; and for suppression of the "too frequent" cough, there is codeine or dihydrocodeinone.

Robitussin®



Each teaspoonful contains:

Glyceryl guaiacolate	100 mg.

Robitussin® A-C



Each teaspoonful contains:

Glyceryl guaiacolate	100 mg.
Prophenpyridamine maleate	7.5 mg.
Codeine phosphate	10 mg.

(exempt narcotic)

Dimetane® Expectorant



Each teaspoonful contains:

Parabromdylamine maleate (DIMETANE)	2 mg.
Glyceryl guaiacolate	100 mg.
Phenylephrine HCl, USP	5 mg.
Phenylpropanolamine HCl, NNR	5 mg.

Dimetane® Expectorant-DC



Each teaspoonful contains the Dimetane Expectorant formula *plus* Dihydrocodeinone bitartrate, NF 1.8 mg.

(exempt narcotic)

References: 1. Cass, L. J., and Frederik, W. S.: Am. Pract. & Digest Treat. *2*:844, 1951. 2. Blanchard, K., and Ford, R. A.: Journal-Lancet *74*:443, 1954. 3. Hayes, E. W., and Jacobs, L. S.: Dis. Chest *30*:441, 1956. 4. Blanchard, K., and Ford, R. A.: Rocky Mountain M. J., Vol. 52, No. 3, 1955. 5. Boyd, E. M., and Pearson: Am. J. M. Sc. *211*:602, 1946.

Robins

A. H. ROBINS COMPANY, INC., RICHMOND 20, VIRGINIA



Equilibrium for the epileptic

Before an epileptic child starts school, better control of seizures and the emotional support of "physician-educated" parents can help him to develop normal interpersonal relationships.

Mebaral is highly effective for most types of seizures, especially major motor seizures in children. Because it does not produce sedative daze, it does not tend to lower learning capacity.

Mebaral is unsurpassed in safety; regardless of the type of epilepsy, it is one of the best tolerated and "... least upsetting of all forms of therapy."[1] Even when Mebaral is used year after year, toxic reactions or ill effects are rare.

MEBROIN®, a synergistic combination of Mebaral and diphenylhydantoin, provides maximal control of seizures with minimal toxicity. Side effects are infrequent. Each relatively tasteless tablet contains 90 mg. of Mebaral and 60 mg. of diphenylhydantoin.

Mebaral dosage: Children under 5 years, from ¼ to ½ grain three or four times daily; over 5 years, from ½ to 1 grain three or four times daily. Adults, from 6 to 9 grains daily.

Mebroin dosage: Children under 6 years, ½ tablet once or twice daily; over 6 years, 1 tablet two or three times daily. Adults, 1 or 2 tablets three times daily (average dosage).

For epilepsy at any age

MEBARAL®

How Supplied: Mebaral tasteless tablets of 200 mg. (3 grains), 100 mg. (1½ grains), 50 mg. (¾ grain), and 32 mg. (½ grain). Bottles of 100. Mebroin virtually tasteless tablets. Bottles of 100 tablets.

1. Robertson, E. G.: *Postgrad. Med.* 25:31, Jan., 1959.

MEBARAL (BRAND OF MEPHOBARBITAL) AND MEBROIN, TRADEMARKS REG. U. S. PAT. OFF.

Winthrop LABORATORIES
New York 18, N. Y.

"...A SIGNIFICANT MAJOR ADVANCE IN THE MANAGEMENT OF TINEA CAPITIS."*

GRIFULVIN®

Griseofulvin

FIRST ORALLY EFFECTIVE AGENT IN RINGWORM

WELL TOLERATED • OBVIATES NEED FOR X-RAY EPILATION • USUALLY CLEARS SCALP RINGWORM WITHIN 4 TO 6 WEEKS

Dosage: Adults—250 mg. q.i.d. or 500 mg. b.i.d. Children—According to weight, 250 mg. to 1.0 Gm. daily, in divided doses.

Supplied: new 500 mg. scored yellow tablets, bottles of 20 and 100; and 250 mg. scored aquamarine tablets, bottles of 16 and 100.

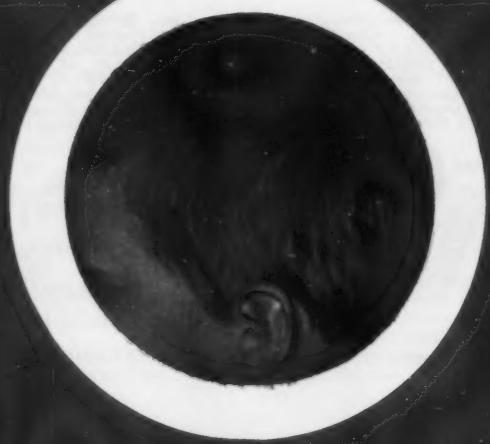
*Newcomer, V. D., et al.: A.M.A. J. Dis. Child. 99:585, 1960.

McNEIL LABORATORIES, INC • PHILADELPHIA 32, PA.

McNEIL

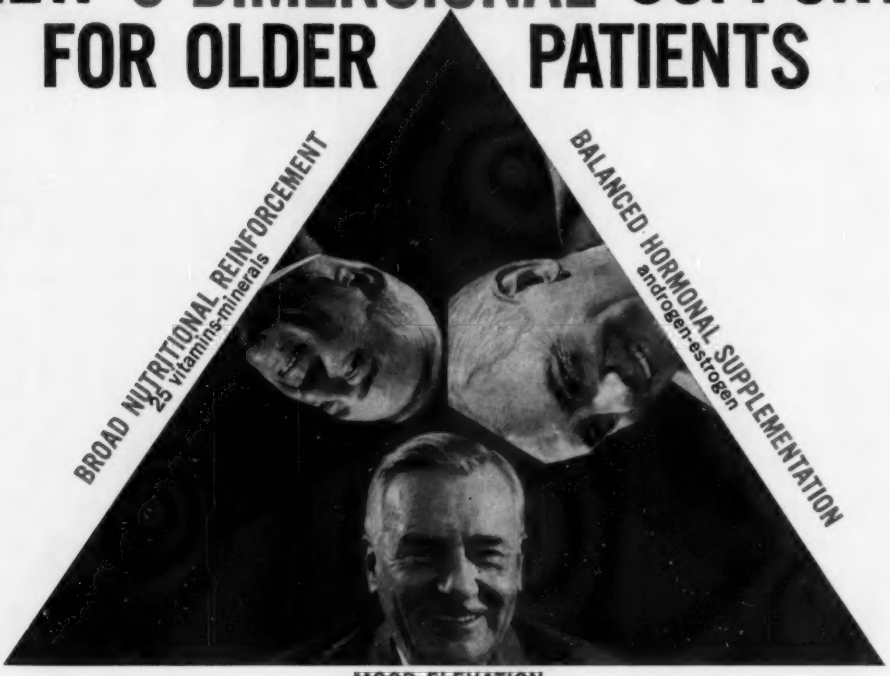


Tinea capitis, before GRIFULVIN. Microscopic and Wood's light examinations help differentiate this infection from non-ringworm disorders.



After 5 weeks' treatment with GRIFULVIN. (Photo taken 1½ months after discontinuance of medication.)

NEW 3-DIMENSIONAL SUPPORT FOR OLDER PATIENTS



COMPREHENSIVE APPROACH TO THREE BASIC PROBLEMS OF AGING

▲ **HELPS MAINTAIN NUTRITIONAL STATUS.** Balanced nutritional support—25 vitamins and minerals—helps correct or prevent common deficiencies due to poor intake and failing appetites.

▲ **AIDS TISSUE TONE AND BONE METABOLISM.** Androgen-estrogen supplement assists protein uptake and bone metabolism. Helps reduce or correct premature tissue atrophy, asthenia, osteoporosis.

▲ **RAISES ACTIVITY AND INTEREST LEVELS.** Mild stimulation by d-amphetamine increases mental and physical activity—sustains alertness and dispels apathy, depression and psychogenic fatigue.

EACH DRY-FILLED CAPSULE CONTAINS: Ethinyl Estradiol 0.01 mg. • Methyl Testosterone 2.5 mg. • d-Amphetamine Sulfate 2.5 mg. • Vitamin A (Acetate) 5,000 U.S.P. Units • Vitamin D 500 U.S.P. Units • Vitamin B_{12} with AUTRINIC® Intrinsic Factor Concentrate 1/15 U.S.P. Unit (Oral) • Thiamine Mononitrate (B_1) 5 mg. • Riboflavin (B_2) 5 mg. • Niacinamide 15 mg. • Pyridoxine HCl (B_6) 0.5 mg. • Calcium Pantothenate 5 mg. • Choline Bitartrate 25 mg. • Inositol 25 mg. • Ascorbic Acid (C) as Calcium Ascorbate 50 mg. • l-Lysine Monohydrochloride 25 mg. • Vitamin E (Tocopherol Acid Succinate) 10 Int. Units • Rutin 12.5 mg. • Ferrous Fumarate (Elemental Iron 10 mg.) 30.4 mg. • Iodine (as KI) 0.1 mg. • Calcium (as $CaHPO_4$) 35 mg. • Phosphorus (as $CaHPO_4$) 27 mg. • Fluorine (as CaF_2) 0.1 mg. • Copper (as CuO) 1 mg. • Potassium (as K_2SO_4) 5 mg. • Manganese (as MnO_2) 1 mg. • Zinc (as ZnO) 0.5 mg. • Magnesium (MgO) 1 mg. • Boron (as $Na_2B_4O_7.10H_2O$) 0.1 mg.

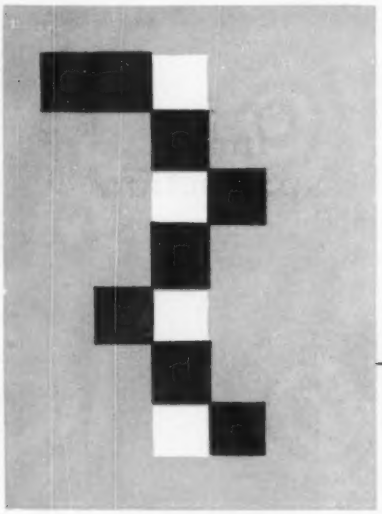
BOTTLES OF 100, 1000.

1 small capsule every morning

GEVRESTIN®

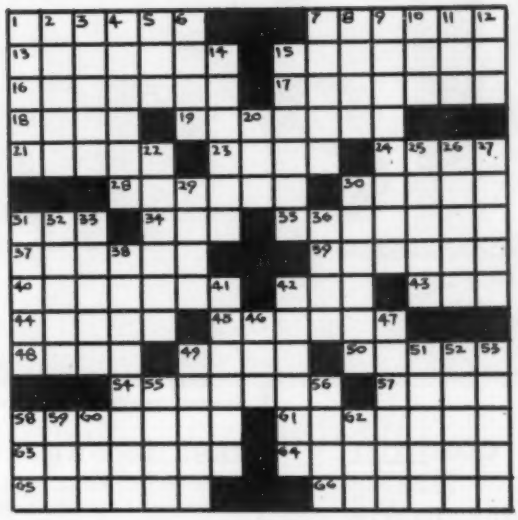
Geriatric Vitamins Minerals-Hormones-d-Amphetamine Lederle

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York



Medical Teasers

A challenging crossword puzzle for the physician
(Solution on page 206a)



ALAN A. BROWN

ACROSS

1. Inflammatory skin disease with small vesicles
7. Deadly
13. The dynamic chromatin in the nucleus
15. Negative electrode
16. Former term for chloride
17. Physician to Henry VIII
18. Aluminum and potassium sulfate
19. Within the intestine
21. Inhabitants of Denmark
23. Beverage (pl.)
24. Falls behind
28. Kind of sword
30. Name for group of iodine or bromine albuminates
31. 201
34. Century (abbr.)
35. Condition following as consequence of another disease
37. Semilunar bone
39. 19th century American statesman
40. Bulboid corpuscle
42. Iodine, calcium (symbols)
43. Thulium, einsteinium (symbols)
44. Replenish with weapons
45. Mold again
48. Tropical wind
49. Group of players
50. Selenium, sulfur, terbium (symbols)
54. Layer, as in the epidermis
57. Journey
58. Evident
61. Any rose-colored rash
63. A crown
64. Resilient
65. One who works with leather
66. Unusual type of mental or physical constitution

DOWN

1. Toward the ventral aspect of the body
2. Inner aspect of the gum
3. Run again
4. Elementary book
5. Electron, gallium (symbols)
6. Location
7. Dens
8. Vessel for heating liquids
9. An element, atomic number 81, symbol Tl
10. Ad—
11. Adrian (abbr.)
12. A sheltered place
14. Substance of teeth
15. Purifies
20. Golf term
22. That part of the vertebral column which forms a part of the pelvis
25. Substance able to act upon an organism
26. In Jewish legend, an artificial man
27. Wire loop for removing polypi
29. Pare
30. Has the same quantity
31. Office worker
32. In anatomy, a combining form for wedge
33. An oily hydrocarbon
36. Suffix forming inceptive verbs
38. Spot rubbed bare of skin
41. The mammary gland
42. Incarcerate
46. Devour
47. Abhor
49. More steadfast
51. Blackened
52. A flower
53. Firmness of the tissues
55. Orthopedic device
56. Brownish spot on the skin
58. Month of the year (abbr.)
59. Large snake
60. Vanadium, radon (symbols)
62. The capsule of a tumor

inner
protection



Tain

(Triacetyloleandomycin, Triaminic® and Calurin®)

to
contain
the
bacteria-prone
cold

safe antibiosis

Triacetyloleandomycin, equivalent to oleandomycin 125 mg. This is the URI antibiotic, clinically effective against certain antibiotic-resistant organisms.

fast decongestion

Triaminic®, 25 mg., three active components stop running noses. Relief starts in minutes, lasts for hours.

well-tolerated analgesia

Calurin®, calcium acetylsalicylate carbamide equivalent to aspirin 300 mg. This is the freely-soluble calcium aspirin that minimizes local irritation, chemical erosion, gastric damage. High, fast blood levels.

TAIN brings quick, symptomatic relief of the common cold (malaise, headache, muscular cramps, aches and pains) especially when susceptible organisms are likely to cause secondary infection. Usual adult dose is 2 Inlay-Tabs, q.i.d. In bottles of 50. B only. Remember, to contain the bacteria-prone cold...TAIN.

SMITH-DORSEY · LINCOLN, NEBRASKA

a division of The Wander Company

a pair of gynecologic patients:



both are free of pain—but only one is on

DILAUDID®

(Dihydromorphinone HCl)

swift, sure analgesia normally unmarred by nausea and vomiting

DILAUDID provides unexcelled analgesia before and after gynecologic, obstetric and surgical procedures. Its high therapeutic ratio is commonly reflected by lack of nausea and vomiting — and marked freedom from dizziness, somnolence, anorexia and constipation.

▲ by mouth ▲ by needle ▲ by rectum

2 mg., 3 mg., and 4 mg.

May be habit forming—usual precautions should be observed as with other opiate analgesics.

KNOLL PHARMACEUTICAL COMPANY • ORANGE, NEW JERSEY

In depression

To restore emotional stability during the declining years



Tofrānil®

brand of imipramine hydrochloride

Thymoleptic

New for geriatric use

Tablets of 10 mg.

Recent studies[1-3] strongly indicate underlying depression as a causative factor, and Tofranil as an eminently successful agent, in restoring the difficult geriatric patient to a more contented frame of mind and more manageable disposition.

1. Cameron, E.: The Use of Tofranil in the Aged, Canad. Psychiat. A. J. Special Supplement, **4**:S160, 1959. 2. Christe, P.: Indications for Tofranil in Geriatrics, Schweiz. med. Wchnschr. **90**:586, 1960. 3. Schmied, J., and Ziegler, A.: Tofranil in Geriatrics, Praxis **49**:472, 1960.

Also Available:

For the treatment of non-geriatric depression: Tofranil tablets of 25 mg. and ampuls of 25 mg. in 2 cc. solution.

Geigy, Geigy, Ardsley, New York

TO-451-60



in the family circle...all-round, year-round vitamin support with **ABDEC**® Kapseals®

ABDEC Kapseals provide comprehensive multivitamin protection all through the year. Each ABDEC Kapseal contains: Vitamin A–10,000 units (3 mg.); Vitamin D–1,000 units (25 mcg.); Vitamin C (ascorbic acid)–75 mg.; Vitamin B_1 (thiamine) mononitrate–5 mg.; Vitamin B_2 (G) (riboflavin)–3 mg.; Vitamin B_6 (pyridoxine hydrochloride)–1.5 mg.; Vitamin B_{12} (crystalline)–2 mcg.; dl-Panthenol–10 mg.; Nicotinamide (niacinamide)–25 mg.; Vitamin E (supplied as d-alpha-tocopheryl acid succinate)–5 I.U. DOSAGE: for the average patient, 1 ABDEC Kapseal daily. ABDEC Kapseals are supplied in bottles of 50, 100, 250, and 1,000. Also available: ABDEC Drops in 15-cc. and 50-cc. bottles with calibrated plastic droppers. 22460

PARKE, DAVIS & COMPANY · DETROIT 32, MICHIGAN

PARKE-DAVIS

benzthiazide

NaClex®

a new molecule with an unsurpassed faculty for salt excretion

A. H. Robins announces NaClex, a potent, oral, nonmercurial diuretic. NaClex is a new molecule, designated benzthiazide. Its unique chemical structure produces a "pronounced increase in diuretic potency"[1] over many older diuretics. NaClex also has antihypertensive properties, and it enhances the activity of other antihypertensive drugs.



in diuresis

salt removal is still the fundamental objective

As salt goes, so goes edema

A fundamental principle of diuresis is that "increased urine volume and loss of body weight are proportional to and the osmotic consequences of loss of ions."[2] New NaClex helps reduce edema through the application of this basic principle.

Apparently functioning in the proximal renal tubules, NaClex strictly limits the reabsorption of sodium and chloride ions. To maintain the essential, subtle balance between salt and water, the body's homeostatic mechanism reponds to this loss of ions by allowing an increased excretion of excessive extracellular water. Thus the NaClex-induced removal of salt leads directly to the reduction of edema.

How potent is benzthiazide?

Compared tablet for tablet with oral diuretics now available, NaClex is unsurpassed in potency. Milligram for milligram, it has achieved optimum diuresis in pharmacologic studies at 1/20 the dose required for chlorothiazide.

What are the major diuretic indications for NaClex?

NaClex produces diuresis, weight loss, and symptomatic improvement in edema associated with conditions such as congestive heart failure, cirrhosis of the liver, chronic renal diseases (including nephrosis), premenstrual tension, toxemia of pregnancy, and obesity. Edema of local origin and that caused by steroids may also benefit.

To what extent is NaClex useful in hypertension?

NaClex has definite antihypertensive properties, and may be used alone in mild hypertension. In severer cases it may be used with other antihypertensive drugs, potentiating them and permitting their use at lower dosage. In hypertension with associated water retention, NaClex is of twofold value. It may be prescribed for congestive heart failure as an ancillary measure to digitalis.

Is potassium excretion a problem with NaClex?

In short-term therapy, excessive potassium excretion is unlikely. In the effective dose range, potassium loss varies from ⅙ to ½ that of sodium. Naturally, the ratio of these ions depends on the rate at which excess sodium stores are depleted, and whether salt intake is restricted.

Can NaClex and mercurials be given concurrently?

Yes. When so employed, NaClex may increase the efficacy of mercurials. But NaClex alone is often effective enough to eliminate the need for parenteral mercurial administration. Also, NaClex may be effective in cases when mercurials are not.

Supply: Available in yellow, scored 50 mg. tablets.

References: 1. Ford, R. V., Cur. Therap. Res., 2:51, 1960. 2. Pitts, R. F., Am. J. Med., 24:745, 1958.

For complete dosage schedules, precautions, or other information about new NaClex, please consult basic literature, package insert, or your local Robins representative, or write to A. H. Robins Co., Inc., Richmond, Va.

A. H. ROBINS COMPANY, INC.
RICHMOND 20, VIRGINIA

RECTALAD®
ENEMA IN RECTALAD DISPOSABLE DISPENSER



LOCAL ACTION TRIGGERS A BOWEL MOVEMENT WITHIN 5-10 MINUTES, WITHOUT DISCOMFORT

Wetting agent spreads ingredients to lubricate and soften the fecal mass for easier passage. Results are rapid and, in over 90% of patients, completely satisfactory.[1-5] Economical RECTALAD ENEMA is not absorbed, does not disturb fluid-electrolyte balance and is well tolerated by patients of all ages.

RECTALAD® ENEMA contains glycerin, *potassium* stearate, dioctyl *potassium* sulfosuccinate, *potassium oleate* and water in a self-contained disposable unit. For your prescription or recommendation: 5 cc. adult size and 2 cc. pediatric size. Samples available on request.

References: 1. Aries, P. L.: J.A.M.A. 169:708 (Feb. 14) 1959. 2. Bare, W. W., and Cornfeld, E.: Penn. M. J., To Be Published. 3. Kratzer, G. L.: Submitted for Publication. 4. Gross, J. M.: To Be Published. 5. Wampole Laboratories, 700 reports on file.

WAMPOLE LABORATORIES • STAMFORD, CONN.



What's Your Verdict?

Edited by Ann Ledakowich, Member of the Bar of New Jersey

A two-year-old child received an injury to her right eye while playing in her parents' farmyard. The eyelid was cut about one-fourth inch in length and fat tissue about the size of a pea protruded from it. The child was taken immediately to the nearest doctor, an osteopathic physician who had previously treated other members of the family.

The physician pushed the protruding tissue back into the wound in the lid, cleansed and sterilized it, and applied a local anesthetic. He took three stitches in the incision, bandaged it, and prescribed an ointment for the eye. He then had the child placed on a treatment table and while the nurse and the child's mother held the struggling child, the physician attempted to examine the eyeball. He assured the mother that the eye was not hurt.

At the physician's direction the child was returned to his office for four subsequent treatments, covering a period of more than two weeks. The child was then taken to an eye specialist who found that the eye had been cut directly beneath the cut in the lid. Sight could no longer be restored to the eye. It was subsequently removed, and a glass eye inserted.

At the trial of a malpractice suit against the osteopath, ample expert testimony was presented establishing that the eye could probably have been saved by prompt treatment within two or three days from the time of the injury. This was impossible, however, after a delay of more than two weeks.

An osteopath of thirty-two years experience testified that under similar circumstances, the usual, proper practice would be to administer a local anaesthetic to the eye. Osteopaths generally have available eye drops that will "freeze" the eye so that the patient feels nothing. No osteopath would sew up a cut in the eyelid before he knew whether there was any damage to the eye itself.

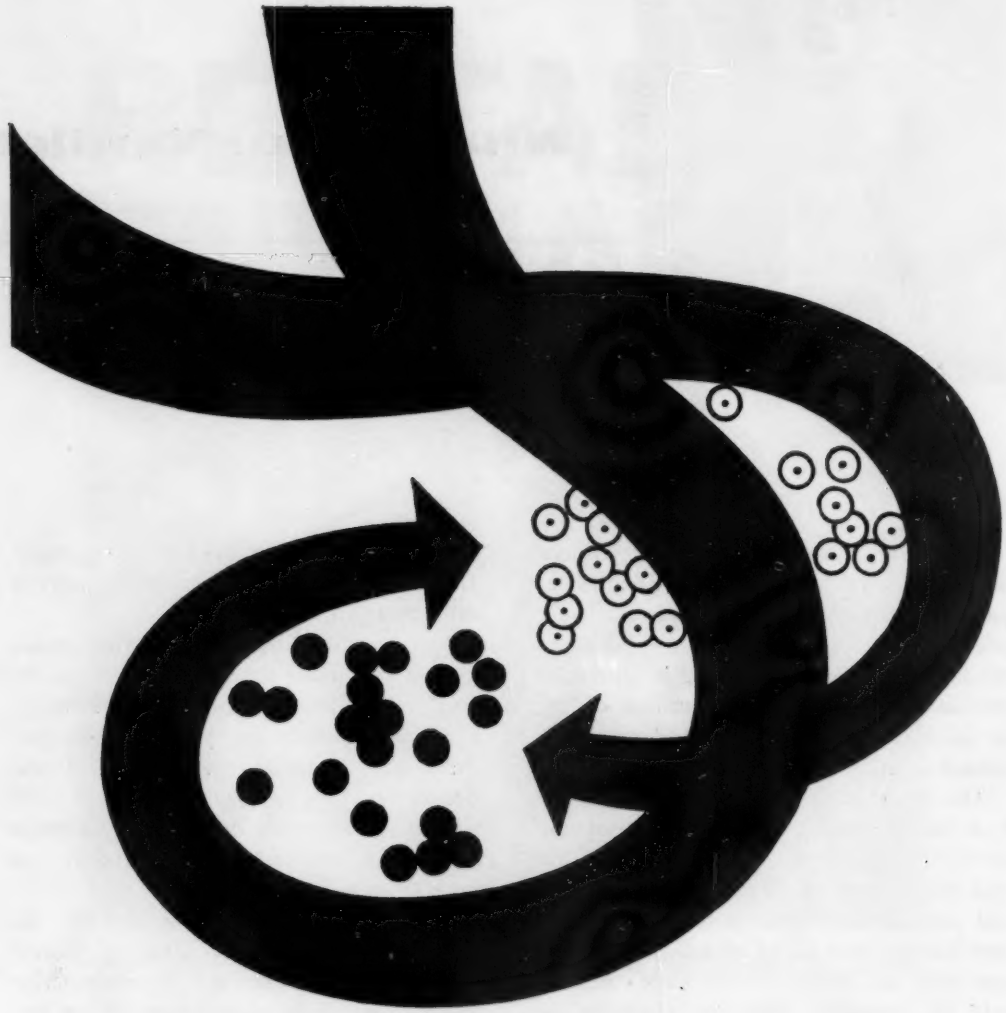
Counsel for the patient contended that the physician was negligent in failing to discover the injury to the eye, and in administering treatment which he should have known was inadequate and improper.

The physician's counsel presented the defense that it was impossible to properly examine the eye due to the child's constant wiggling.

In its charge to the jury, the trial court eliminated from its consideration all issues as to whether the physician's diagnosis and treatment met with the standard of care ordinarily exercised by practitioners of his school of medicine under like circumstances and in similar localities.

On the jury's verdict the court entered judgment for the physician, and an appeal was taken. How would you decide the appeal?

Answer on page 232a.



Now...the only Nystatin combination with extra-active DECLOMYCIN®
Demethylchlortetracycline

with extra-broad spectrum benefits:— action at lower milligram intake...broad-range action...sustained peak activity... extra-day security against resurgence of primary infection or secondary invasion.

DECLOSTATIN®

Demethylchlortetracycline and Nystatin LEDERLE

CAPSULES, *150 mg. DECLOMYCIN Demethylchlortetracycline HCl and 250,000 units Nystatin.*
DOSAGE: *average adult, 1 capsule four times daily.*

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NEW...super-smooth coated tablets
...with rapid disintegration time

improved Natalins® tablets

comprehensive vitamin-mineral support, pre- and post-natal

FORMERLY NATALINS COMPREHENSIVE

Developed and perfected by Mead Johnson research, the new super-smooth coating of Natalins tablets makes them even easier to swallow, even more appealing to your OB patients. And there is no interference with disintegration time—so important for assured vitamin protection. Natalins tablets provide generous amounts of iron, calcium, vitamin C, plus eight other significant vitamins for the increased needs of multiparas.

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...if you prefer a less comprehensive formulation

- **Natalins® Basic tablets**...four basic vitamins and minerals

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Symbol of service in medicine

117R60

"R Day"

for the neuritis patient can be tomorrow

"R Day"—*when pain is relieved*—can come early for patients with inflammatory (non-traumatic) neuritis if treatment with Protamide is started promptly after onset.

Protamide is the therapy of choice for either early or delayed treatment, but early use assures greatest efficacy.

For example, in a 4-year study[1] and a 26-month study[2] a combined total of 374 neuritis patients treated with Protamide during the first week of symptoms responded as follows:

60% required only 1 or 2 daily injections for complete relief

96% experienced excellent or good results with 5 or less injections

Thus, the neuritis patient's first visit—especially an early one—affords the opportunity to speed his personal "R Day."

Protamide is available at pharmacies and supply houses in boxes of ten 1.3 cc. ampuls. Intramuscularly only, one ampul daily.



PROTAMIDE®

REFER TO PDR
PAGE 813

Sherman Laboratories
Detroit 11, Michigan

1. Lehrer, H. W., et al.: Northwest Med. 75:1249, 1955.
2. Smith, Richard T.: New York Med. 8:16, 1952.

to encourage colonic peristalsis without whipping the bowel

DORBANE



DORBANTYL



DORBANTYL FORTE



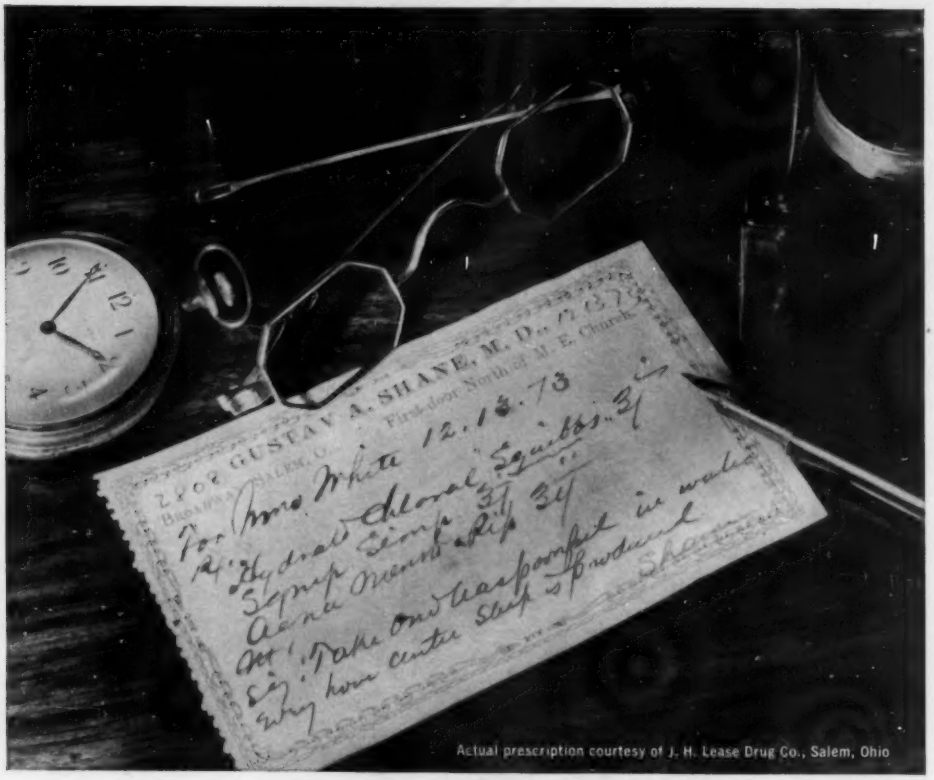
The active principle of Dorbane reaches the colon through the circulation. It acts directly and selectively upon the intrinsic plexus of the colon. The small bowel is not affected. Within 6 to 12 hours evacuation occurs without cramping or griping. Nonhabituating. Each scored tablet of Dorbane contains 75 mg., and each teaspoonful of orange-flavored liquid contains 37.5 mg. of 1,8 dihydroxyanthraquinone. Suitable for patients of all ages.

Dorbantyl combines the colonic stimulant action of Dorbane (25 mg.) with the stool-softening effect of dioctyl sodium sulfosuccinate (50 mg.), an inert and safe surface-wetting agent, in each orange-and-black capsule or teaspoonful of orange-pineapple-flavored suspension.

Dorbantyl Forte offers double strength dosage of the Dorbantyl combination for greater convenience and economy for patients requiring extra potency. In orange-and-gray capsules only.

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Actual prescription courtesy of J. H. Lease Drug Co., Salem, Ohio

"Chloral hydrate...oldest [synthetic] member of the hypnotic group and clinical experience shows...it is still one of the best."[1]

Noctec

Squibb Chloral Hydrate

...and the rest is easy!

DOSAGE: *Adults*—one or two 7½ gr. capsules or one or two teaspoonfuls of Noctec Solution 15 to 30 minutes before bedtime or ½ hour before surgery.

Children—one or two 3¾ gr. capsules or ¼ to 1 teaspoonful of Noctec Solution, depending on weight, 15 to 30 minutes before bedtime or ½ hour before surgery.

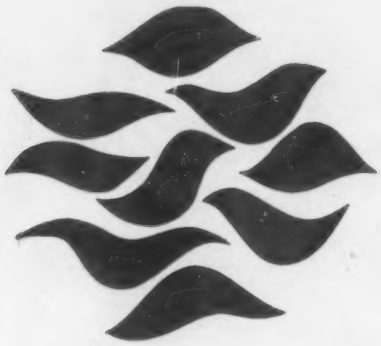
SUPPLY: 7½ gr. and 3¾ gr. capsules. Solution, 7½ gr. per 5 cc. teaspoonful.

For complete information, consult package insert or write to Professional Service Dept., Squibb, 745 Fifth Ave., New York 22, N.Y.

REFERENCE: 1. Goodman, L. S. and Gilman, A.: *The Pharmacological Basis of Therapeutics, Second Edition*, New York, Macmillan, 1955, p. 163.

SQUIBB *Squibb Quality—The Priceless Ingredient*

NOCTEC® IS A SQUIBB TRADEMARK.



in nine years Novahistine hasn't cured a single cold...but it has been prescribed
for relief of symptoms
in over 10,000,000 patients*



Novahistine LP tablets begin releasing medication promptly and continue bringing relief for 8 to 12 hours. Two Novahistine LP tablets in the morning and two in the evening will effectively control the average patient's discomfort from a cold. Each tablet contains 25 mg. phenylephrine HCl and 4 mg. chlorprophenpyridamine maleate.

*Based on National Prescription Audits of new Novahistine prescriptions since 1952.

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Novahistine® LP
LONG ACTING



THE FIRST MEDICATION FOR SIMULTANEOUS, OVER-ALL MANAGEMENT OF CHRONIC GOUT AND GOUTY ARTHRITIS

NEW

Triurate®

combines 3 superior agents in 1 tablet for more comprehensive treatment:

FLEXIN® **Zoxazolamine†, 100 mg.:** the most potent uricosuric agent available [1-3]—yet exhibits minimal side effects.[4] Promotes maximum excretion of urates...facilitates resorption of tophi and prevents formation of new deposits. Relieves chronic joint pain and helps restore mobility.

COLCHICINE, **0.5 mg.:** the time-tested specific for gout—most effective in preventing acute attacks.[1,5,6]

TYLENOL® **Acetaminophen, 300 mg.:** the effective nonirritating analgesic[7] which relieves chronic aches and pains without interfering with uricosuric action.[8,9]

Average Dose: One tablet three times a day after meals.

Supplied: Scored, beige tablets, imprinted McNEIL, bottles of 50.

Literature on method of administration and dosage is available upon request.

References:

(1) Boland, E. W.: World-Wide Abstracts **3**:11, 1960. (2) Talbott, J. H.: Arth. & Rheumat. **2**:182, 1959. (3) Burns, J. J.; Yü, T. F.; Berger, L., and Gutman, A. B.: Am. J. Med. **25**:401, 1958. (4) Kolodny, A. L.: J. Chron. Dis. **11**:64, 1960. (5) Beckman, H.: Pharmacology in Clinical Practice, Philadelphia, Saunders, 1952, pp. 515-516. (6) Talbott, J. H.: J. Bone & Joint Surg. **40-A**:994, 1958. (7) Batterman, R. C., and Grossman, A.: J.A.M.A. **159**:1619, 1955. (8) Connor, T. B.; Carey, T. N.; Davis, T., and Lovice, H.: J. Clin. Invest. **38**:997, 1959. (9) Reed, E. B.: Unpublished data.

†U.S. Patent No. 2,890,985

343A60

McNEIL

McNEIL LABORATORIES, INC • PHILADELPHIA 32, PA.



AFTER HOURS

No man is really happy or safe without a hobby, and it makes precious little difference what the outside interest may be—botany, beetles or butterflies, roses, tulips or irises; fishing, mountaineering or antiquities—anything will do so long as he straddles a hobby and rides it hard.—Sir William Osler

Dr. John R. Smithson of Dewey, Oklahoma, has been a stamp collector for the last 20 years and says that his hobby gives him a "chance to disassociate from the everyday routine and travel through history and many countries."

He feels that it is "vitally important for doctors to detach themselves from the cares and woes of humanity at times, if for no other reason than to keep a proper perspective."

Stamp collecting will probably remain a strong interest in the Smithson family for a long time to come, for the doctor's sons, David, aged 7 and John, 13, are also philatelists.



Fishing is a hobby which appeals to many physicians. Dr. Harold L. Stemsrud of Alexandria, Minn., is a veteran fisherman, having been at it for 50 years. He enjoys it for the most part because it brings him close to nature and away from the phone.

"The gentle sound of waves on a boat, the birds overhead, the clear air—they all help to blot out one's cares. I feel that it is very necessary to get away from it all, and a fishing trip does this for me."

Dr. Stemsrud has made some memorable catches in his time. His walleyed pike won a first prize at Manitoba, Canada, in 1959, the same year he was named winner of a *Field & Stream* medal.



4 essential actions in a single tablet to simplify treatment of the hypertensive complex



CENTRAL ACTION OF SER-AP-ES:
SER-AP-ES acts centrally to inhibit or block the outflow of sympathetic vasopressor substances. In addition, Ser-Ap-Es improves cerebral vascular tone.



RENAL ACTION OF SER-AP-ES:
Ser-Ap-Es increases renal blood flow, thereby halting or reversing the ischemic process in advancing hypertension. The increase in urine volume and sodium and chloride excretion which occurs with Ser-Ap-Es therapy also benefits the hypertensive patient.

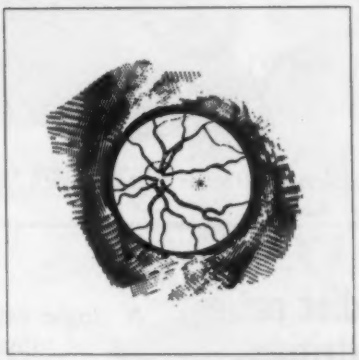
SERPASIL® (reserpine CIBA)
APRESOLINE® hydrochloride (hydralazine hydrochloride CIBA)
ESIDRIX® (hydrochlorothiazide CIBA)

Ser-Ap-Es®

(Serpasil®+Apresoline®+Esidrix®)

Inclusive single-tablet antihypertensive





CIBA
SUMMIT · NEW JERSEY

CARDIAC ACTION OF SER-AP-ES: Ser-Ap-Es has a beneficial effect on the hypertensive heart; diastole is prolonged, and there is a decrease in both heart rate and cardiac output—which combine to ease the strain on the overworked myocardium.

VASCULAR ACTION OF SER-AP-ES: Ser-Ap-Es opposes the action of pressor substances on the vasculature. In addition, Ser-Ap-Es makes the vasculature less responsive to circulating vasopressor amines and more responsive to the antipressor components of the combination tablet.

Supplied: SER-AP-ES *Tablets*, each containing 0.1 mg. Serpasil, 25 mg. Apresoline hydrochloride, and 15 mg. Esidrix. ***Complete information sent on request.***



"All my 'diet' patients get an extra lift with 'Beminal' Forte"

in the special diet patient improve nutrition . . . promote better health with

BEMINAL FORTE

Ayerst

Therapeutic B Factors with Vitamin C

A single capsule provides 250 mg. of vitamin C and massive doses of B factors to meet the need when requirements are high and reserves are low. Prescribe "Beminal" Forte for patients on special diets, pre- and postoperatively, and during convalescence, to improve the prognosis and accelerate recovery.

Supplied: No. 817 — Bottles of 100 and 1,000 capsules.

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teamwork in a teaspoon



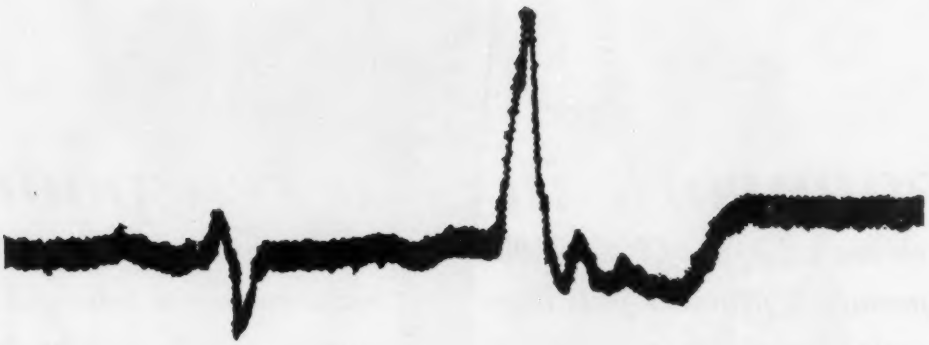
Each teaspoonful of* POLARAMINE *Expectorant provides four therapeutic effects for more complete, rapid and effective relief of the coughs and complications associated with your patients' allergic respiratory disorders.

Swollen, congested mucous membranes are returned to normal rapidly, gently; dry, unproductive coughing is relieved; and further allergic response and its manifestations are reduced.

Each 5 cc. teaspoonful of POLARAMINE Expectorant contains:
2 mg. POLARAMINE (dexchlorpheniramine) Maleate
20 mg. d-Isoephedrine Sulfate
100 mg. Glyceryl Guaiacolate
Supply: 16 oz. bottles.

Schering

POLARAMINE®
expectorant



for cardiac arrhythmias... obvious advantages

PRONESTYL® HYDROCHLORIDE

SQUIBB PROCAINE AMIDE HYDROCHLORIDE

Pronestyl offers obvious advantages over quinidine and procaine in the management of cardiac arrhythmias: "Procaine amide [Pronestyl] should be the drug of choice in arrhythmias of ventricular origin." [1]—on oral administration, side effects are less marked than with quinidine—administered I. V., Pronestyl is safer than a corresponding I.V. dose of quinidine—administered I. M., Pronestyl acts faster than I. M. quinidine[2]—Pronestyl sometimes stops arrhythmias which have not responded to quinidine[3,4]—Pronestyl may be used in patients sensitive to quinidine—more prolonged action, less toxicity, less hypotensive effect than procaine—no CNS stimulation such as procaine may produce.

Supply: For convenient oral administration: Capsules, 0.25 gm., in bottles of 100.
For I. M. and I. V. administration: Parenteral Solution, 100 mg. per cc., in vials of 10 cc.

References: 1. Zapata-Diaz, J., et al.: Am. Heart J. 43:854, 1952. 2. Modell, W.: in Drugs of Choice, C.V. Mosby Co., St. Louis, 1958, p. 454. 3. Kayden, H. J., et al.: Mod. Concepts Cardiovasc. Dis. 20:100. 1951. 4. Miller, H., et al.: J.A.M.A. 146:1004, 1951.

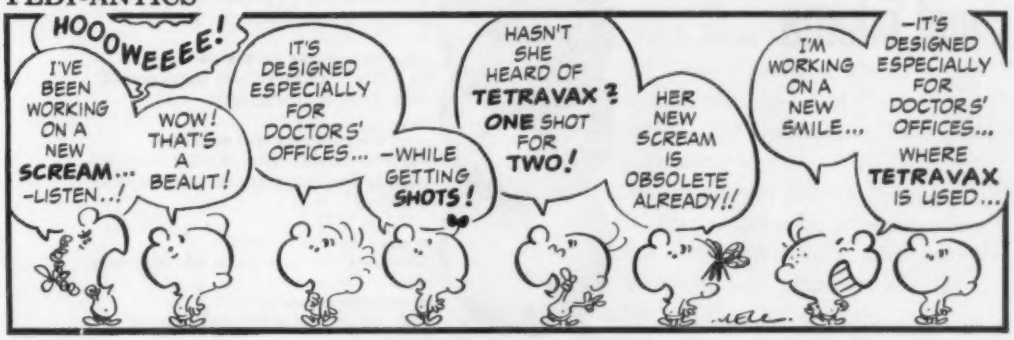
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"PRONESTYL"® IS A SQUIBB TRADEMARK

FOR SIMULTANEOUS IMMUNIZATION
AGAINST 4 DISEASES:

Poliomyelitis-Diphtheria-Pertussis-Tetanus

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TETRAVAX®

DIPHTHERIA AND TETANUS TOXOIDS WITH PERTUSSIS AND POLIOMYELITIS VACCINES

now you can immunize against more diseases...with fewer injections

Dose: 1 cc.
Supplied: 9 cc. vials in *clear plastic* cartons. Package circular and material in vial can be examined without damaging carton. Expiration date is on vial for checking even if carton is discarded.



For additional information, write Professional Services, Merck Sharp & Dohme, West Point, Pa.

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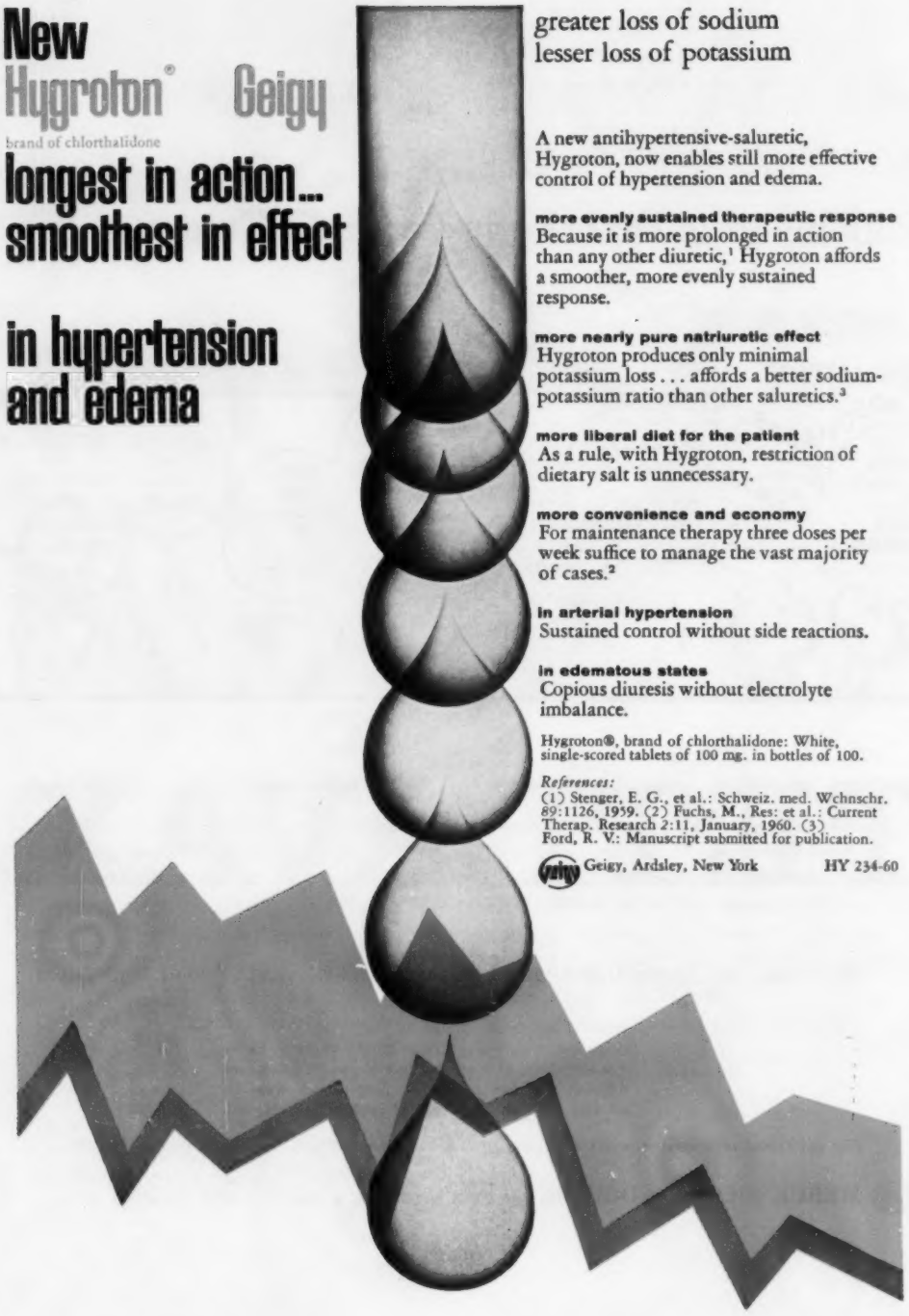
MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

New Hygroton® Geigy

brand of chlorthalidone

longest in action... smoothest in effect

in hypertension and edema



greater loss of sodium
lesser loss of potassium

A new antihypertensive-saluretic, Hygroton, now enables still more effective control of hypertension and edema.

more evenly sustained therapeutic response
Because it is more prolonged in action than any other diuretic,[1] Hygroton affords a smoother, more evenly sustained response.

more nearly pure natriuretic effect
Hygroton produces only minimal potassium loss . . . affords a better sodium-potassium ratio than other saluretics.[3]

more liberal diet for the patient
As a rule, with Hygroton, restriction of dietary salt is unnecessary.

more convenience and economy
For maintenance therapy three doses per week suffice to manage the vast majority of cases.[2]

in arterial hypertension
Sustained control without side reactions.

in edematous states
Copious diuresis without electrolyte imbalance.

Hygroton®, brand of chlorthalidone: White, single-scored tablets of 100 mg. in bottles of 100.

References:
(1) Stenger, E. G., et al.: Schweiz. med. Wchnschr. 89:1126, 1959. (2) Fuchs, M., Res: et al.: Current Therap. Research 2:11, January, 1960. (3) Ford, R. V.: Manuscript submitted for publication.

Geigy, Ardsley, New York HY 234-60



Who Is This Doctor?

Identify the famous physician from clues in this brief biography

He was born in the family of a merchant in Thorn, East Prussia, on February 19, 1473. When he was ten his father died and he was adopted by his uncle, a Catholic priest. At the age of 18, he went to Cracow, then the capital of Poland, and studied at the University. There he read the Latin classics and was introduced to arithmetic and astronomy.

To continue his education, his uncle sent him to Bologna to study law. His wide range of interest, however, covered many other branches of knowledge as well, particularly mathematics and astronomy. At Bologna he spent four years; it was there that he began to observe the heavens.

In 1500, he went to Rome to take part in the great Easter celebration of the Jubilee Year. He remained in Rome for a year, giving lectures on astronomy and mathematics.

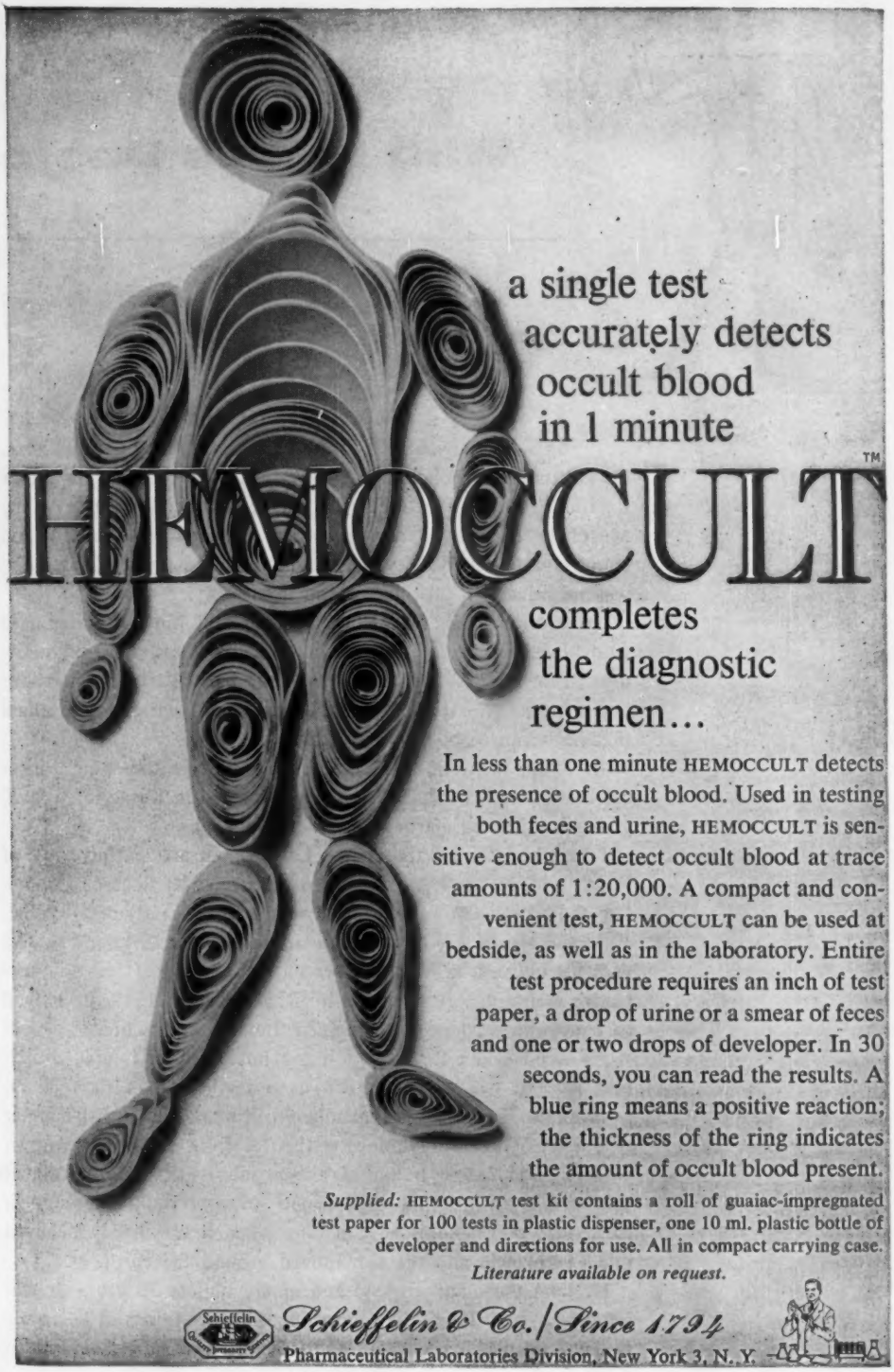
Later, he attended the Canon Law School at the University of Padua and, in 1503, was awarded the degree of doctor of canon law at Ferrara. Only then did he return to the study of medicine.

At the age of 33, he returned to Heilsberg in Ermland to live with his uncle, a bishop, and served as his political and administrative assistant. After the death of his uncle, in 1512, he moved to Frauenburg where he remained the rest of his life.

As a physician he treated many noblemen and high church officials and was better known as a medical man than as an astronomer. Today he is remembered primarily as an astronomer who developed a revolutionary theory about the movement of planets. In Heilsburg he put his theory into writing. He postulated that the earth and all the planets move around the sun in concentric circles—this is at a time when it was firmly believed that the planets and the sun moved around the earth.

He kept the manuscript locked up for almost 30 years. It was published under the title "Concerning the Revolutions of Heavenly Bodies," in 1543, the year of his death. Can you identify this doctor?

Answer on page 232a.



a single test
accurately detects
occult blood
in 1 minute

HEMOCCULT™

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the diagnostic
regimen...

In less than one minute HEMOCCULT detects the presence of occult blood. Used in testing both feces and urine, HEMOCCULT is sensitive enough to detect occult blood at trace amounts of 1:20,000. A compact and convenient test, HEMOCCULT can be used at bedside, as well as in the laboratory. Entire test procedure requires an inch of test paper, a drop of urine or a smear of feces and one or two drops of developer. In 30 seconds, you can read the results. A blue ring means a positive reaction; the thickness of the ring indicates the amount of occult blood present.

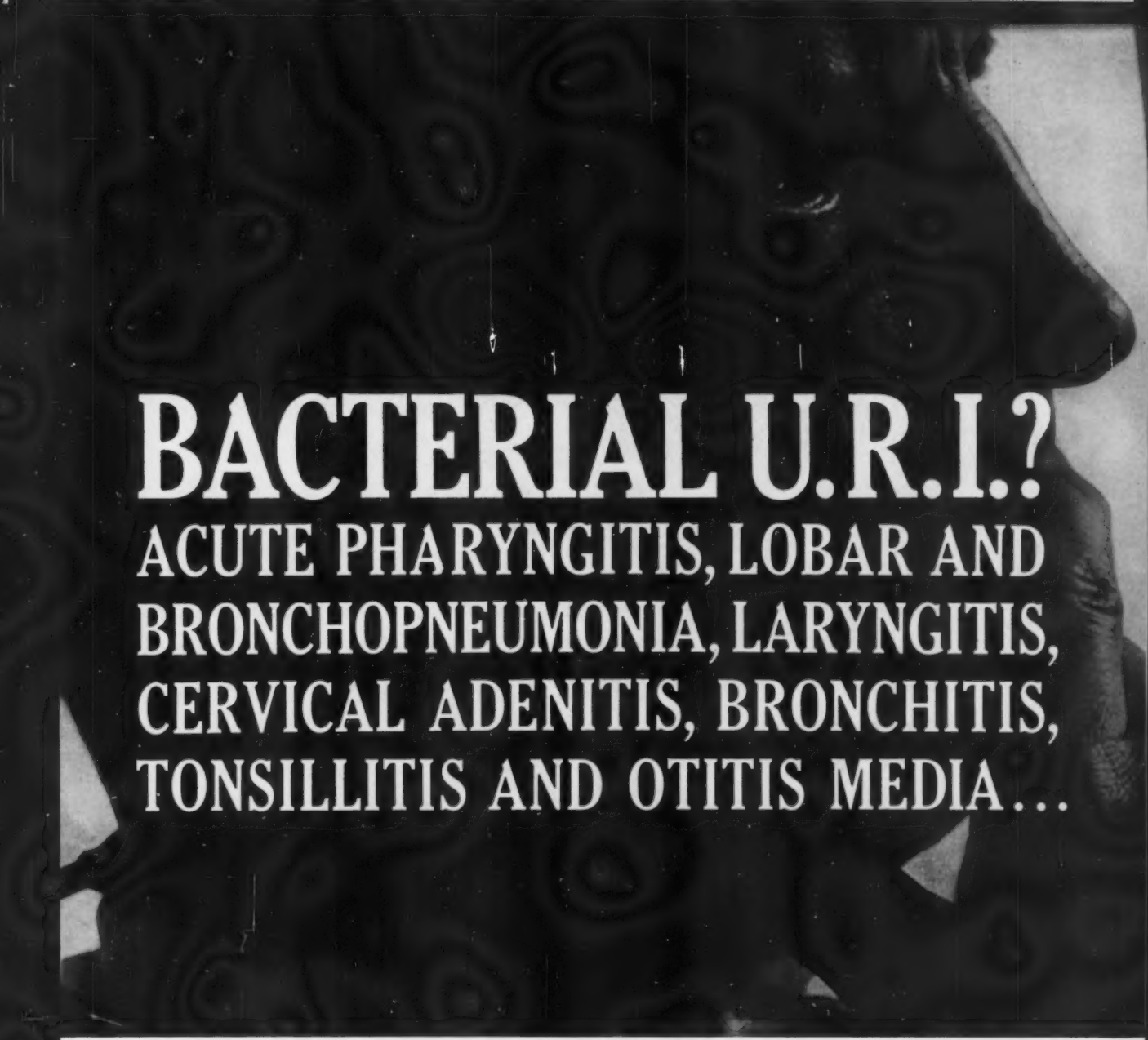
Supplied: HEMOCCULT test kit contains a roll of guaiac-impregnated test paper for 100 tests in plastic dispenser, one 10 ml. plastic bottle of developer and directions for use. All in compact carrying case.

Literature available on request.

Schieffelin

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BACTERIAL U.R.I.?

ACUTE PHARYNGITIS, LOBAR AND BRONCHOPNEUMONIA, LARYNGITIS, CERVICAL ADENITIS, BRONCHITIS, TONSILLITIS AND OTITIS MEDIA...

BEFORE YOU WRITE FOR AN ANTIBIOTIC CONSIDER THE 'PLUSES' OF NEW ALPEN FOR YOUR PATIENTS!

Alpen is more active against clinical isolates of penicillin-resistant staphylococci than older penicillins.[1] **Alpen** is indicated for acute and chronic streptococcal infections. **Alpen** is rapidly absorbed to produce high blood levels. **Alpen** has greater freedom from the G.I. sequelae of the broad spectrum -mycins.

ALPEN

See ALPEN Statement of Directions for complete details.

1. Morigi, E. M. E.; Wheatley, W. B., and Albright, H.: Antibiotics Annual 1959-60, N.Y., Antibiotic, Inc., 1960, 131. **ALPEN™, potassium phenethicillin**

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New! improved...specifically formulated for the growing years

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From toddlers to early teens, Vi-Sol chewable vitamins present no swallowing problem. They're chewable. They're tasty. They dissolve right on the tongue. Delightfully fruit flavored. No vitamin B aftertaste or odor.

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Chewable Vitamins
3 basic vitamins

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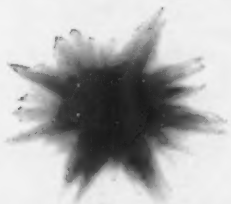
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Trichomonad explosion with VAGISEC® liquid & jelly immediately reduces distress of vaginal trichomoniasis

The acute symptoms of vaginal trichomoniasis—profuse, scalding leukorrhea, itching, swelling, and painful, difficult coitus[2]—often turn a happy, efficient wife and mother into the family storm center.

VAGISEC restores domestic tranquility

Just one office treatment with VAGISEC provides immediate symptomatic relief[1]—your patient is quickly restored to her family.



VAGISEC explodes trichomonads within 15 seconds of contact

Excellent long-term results by strictest cure criterion

Study A. Giorlando and Brandt[3] demonstrated repeated negative cultures for three to eight months in 54 of 58 (93.1%) vaginal trichomoniasis patients treated with VAGISEC liquid and jelly.

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—lessens "psycho-social"[5] symptoms, too



VAGISEC®
liquid & jelly

RAMSES® Prophylactics—to prevent re-infection

Most physicians advise the use of a prophylactic during coitus, while the wife is under treatment and for four to nine months thereafter;[1,4,5] and when they do, 50.3% specify RAMSES.

VAGISEC and RAMSES are registered trade-marks of Julius Schmid, Inc.

References: 1. Decker, A.: New York J. Med. 57:2237 (July 1) 1957. **2.** Karnaky, K. J.: South. M. J. 51:925 (July) 1958. **3.** Giorlando, S. W., and Brandt, M. L.: Am. J. Obst. & Gynec. 76:666 (Sept.) 1958. **4.** Roberts, C. L., and Sullivan, J. J.: West. Med. 1:12 (Apr.) 1960. **5.** Trussell, R. E.: New York Med. 13:717 (Sept. 20) 1957. **6.** Weiner, H. H.: Clin. Med. 5:25 (Jan.) 1958.

Active ingredients: Polyoxyethylene nonyl phenol, Sodium ethylene diamine tetra-acetate, Sodium dioctyl sulfosuccinate.

Julius Schmid, Inc.
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"the most effective drug against tremor"[1]

IN PARKINSONISM Parsidol exceeds all other drugs for reducing tremor,[1] a principal impairment of this disease. Parsidol also brightens the patient's outlook and, by lessening rigidity, contributes to restoration of his self-confidence. Especially well tolerated by elderly patients,[1,2,3] Parsidol is effective alone yet is compatible with most other antiparkinsonian drugs.[1] Most patients respond to a maintenance dosage of 50 mg. q.i.d.

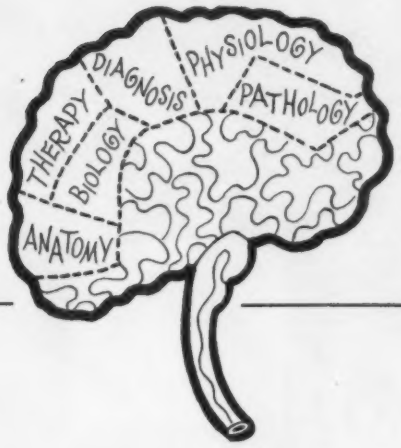
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PARSIDOL® *brand of ethopropazine hydrochloride*

relieves tremor and rigidity in PARKINSONISM

1. Schwab, R. S. and England, A. C.: *J. Chron. Dis. 8*:488 (Oct.) 1958.
2. Schwab, R. S.: *Geriatrics 14*:545 (Sept.) 1959.
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PAR-GP03



Mediquiz

These questions were prepared especially for Medical Times by the Professional Examination Service, a division of the American Public Health Association. Answers will be found on page 232a.

1. An acute illness characterized by headache, conjunctival injection, leukopenia, and 5-10 day course is:

A) Trachoma.
B) Weil's disease.
C) Serum sickness.
D) Phlebotomus fever.
E) Dengue.

2. Paroxysmal cold hemoglobinuria characteristically occurs in:

A) Syphilitics reverting to sero-negativity.
B) Secondary syphilis.
C) Late latent syphilis.
D) General paresis.
E) Primary syphilis.

3. The most frequent complication of cardiovascular syphilis is:

A) A Herxheimer reaction.
B) Bernheim's syndrome.
C) Ventricular arrhythmia.
D) Congestive heart failure.
E) Cardiac tamponade.

4. The use of Benemid in the treatment of gout is based upon its ability to:

A) Depress connective tissue sensitivity.
B) Mobilize urate from peripheral deposits.
C) Prevent the absorption of ingested purines.
D) Depress hepatic urate formation.
E) Block tubular resorption of urate.

5. The commonest cause of death in cryptococcosis is:

A) Renal failure.
B) Intestinal tract hemorrhage.
C) Congestive heart failure.
D) Meningo-encephalitis.
E) Respiratory insufficiency.

6. The diagnosis of chlorpromazine hepatitis is best made by the history plus:

A) Auscultation of the right upper quadrant.
B) Eosinophil count.
C) Needle biopsy of the liver.
D) Serum ammonia determination.
E) Comparison of serum glutamic and oxalic transaminase.

7. Of the following, the procedure most likely to furnish a positive diagnosis of sarcoidosis is:

A) Pleural biopsy.
B) Gastric suction biopsy.
C) Prescalene fat pad biopsy.
D) Inguinal node biopsy.
E) Pleural fluid cell block.

8. Eosinophilia is a characteristic feature of infestation with all of the following organisms *except*:

A) Clonorchis sinensis.
B) Echinococcus.
C) Endamoeba histolytica.

Concluded on page 86a


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Lifts depression...



You see an improvement within a few days
Thanks to your prompt treatment and the smooth action of Deprol, her depression is relieved and her anxiety and tension calmed – *often in a few days.* She eats well, sleeps well and soon returns to her normal activities.

as it calms anxiety!

Smooth, balanced action lifts depression as it calms anxiety... rapidly and safely

Balances the mood – no "seesaw" effect of amphetamine-barbiturates and energizers. While amphetamines and energizers may stimulate the patient *–they often aggravate anxiety and tension.*

And although amphetamine-barbiturate combinations may counteract excessive stimulation*–they often deepen depression.*

In contrast to such "seesaw" effects, Deprol's smooth, *balanced* action lifts depression as it calms anxiety–both at the same time.

Acts swiftly – the patient often feels better, sleeps better, within a few days. Unlike the delayed action of most other antidepressant drugs, which may take two to six weeks to bring results, Deprol relieves the patient quickly – often within a few days. Thus, the expense to the patient of long-term drug therapy can be avoided.

Acts safely – no danger of liver damage. Deprol does not produce liver damage, hypotension, psychotic reactions or changes in sexual function–frequently reported with other antidepressant drugs.

Bibliography *(13 clinical studies, 858 patients)*: **1.** Alexander, L. (35 patients): Chemotherapy of depression – Use of meprobamate combined with benactyzine (2-diethylaminoethyl benzilate) hydrochloride. J.A.M.A. *166*:1019, March 1, 1958. **2.** Bateman, J. C. and Carlton, H. N. (50 patients): Meprobamate and benactyzine hydrochloride (Deprol) as adjunctive therapy for patients with advanced cancer. Antibiotic Med. & Clin. Therapy 6:648, Nov. 1959. **3.** Beerman, H. M. (44 patients): The treatment of depression with meprobamate and benactyzine hydrochloride. Western Med. *1*:10, March 1960. **4.** Bell, J. L., Tauber, H., Santy, A. and Pulito, F. (77 patients): Treatment of depressive states in office practice. Dis. Nerv. System 20:263, June 1959. **5.** Breitner, C. (31 patients): On mental depressions. Dis. Nerv. System 20:142, (Section Two), May 1959. **6.** Gordon, P. E. (50 patients): Deprol in the treatment of depression. Dis. Nerv. System 21:215, April 1960. **7.** Landman, M. E. (50 patients): Clinical trial of a new antidepressive agent. J. M. Soc. New Jersey. In press, 1960. **8.** McClure, C. W., Papas, P. N., Speare, G. S., Palmer, E., Slattery, J. J., Konefal, S. H., Henken, B. S., Wood, C. A. and Ceresia, G. B. (128 patients): Treatment of depression – New technics and therapy. Am. Pract. & Digest Treat. 10:1525, Sept. 1959. **9.** Pennington, V. M. (135 patients): Meprobamate-benactyzine (Deprol) in the treatment of chronic brain syndrome, schizophrenia and senility. J. Am. Geriatrics Soc. 7:656, Aug. 1959. **10.** Rickels, K. and Ewing, J. H. (35 patients): Deprol in depressive conditions. Dis. Nerv. System 20:364, (Section One), Aug. 1959. **11.** Ruchwarger, A. (87 patients): Use of Deprol (meprobamate combined with benactyzine hydrochloride) in the office treatment of depression. M. Ann. District of Columbia 28:438, Aug. 1959. **12.** Settel, E. (52 patients): Treatment of depression in the elderly with a meprobamate-benactyzine hydrochloride combination. Antibiotic Med. & Clin. Therapy 7:28, Jan. 1960. **13.** Splitter, S. R. (84 patients): Treatment of the anxious patient in general practice. J. Clin. & Exper. Psychopath. In press, April-June 1960.

Dosage: Usual starting dose is 1 tablet q.i.d. When necessary, this dose may be gradually increased up to 3 tablets q.i.d.

Composition: 1 mg. 2-diethylaminoethyl benzilate hydrochloride (benactyzine HCl) and 400 mg. meprobamate.
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Rogers, H.L.: Postgrad. Med. *26*:85 (July) 1959.

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RYNATAN has more published clinical proof of effectiveness, safety and long action* than any other oral decongestant.

1. Report on a New Repository Principle, Med. Sc. *3*:376, 1958. **2.** Steller, R. E.; DeMar, E. A., and Schwartz, F. R.: Indust. Med. & Surg. *28*:362, 1959. **3.** Villanyi, L., and Stillwater, R. B.: E.E.N.T. Monthly *38*:650, 1959. **4.** Lawler, E. G., and Limperis, N. M.: Clin. Med. *5*:1669, 1958. **5.** Simon, D.: Clin. Med. Sept., 1960. **6.** Sherwood, H., and Epstein, J.: New York J. Med. *60*:1793, 1960. **7.** Kile, R. L.: Antibiotic Med. & Clin. Therap. *5*:578, 1958.

RYNATAN TABULES keep heads crystal clear for 10-12 hours with a single oral dose. Each tabule contains: Phenylephrine tannate, 25 mg.; Chlorpheniramine tannate, 8 mg.; Pyrilamine tannate, 25 mg. **Adults:** 1 or 2 tabules each 12 hrs. **Children:** Each 12 hrs.—6-7 yrs. ½ tabule; 8-11 yrs. ½-1 tabule; 12 yrs. and older 1-2 tabules.

RYNATAN SUSPENSION . . . the only long-acting liquid oral nasal decongestant for children. Each 5 cc. contains: Phenylephrine tannate, 5.0 mg.; Chlorpheniramine tannate, 2.0 mg.; Pyrilamine tannate, 12.5 mg. **Children:** Each 12 hrs.—6 mos.-1 yr. ⅓ tsp.; 2-4 yrs. ½ tsp.; 5-7 yrs. 1 tsp.; 8-11 yrs. 2 tsp.; 12 yrs. and older 2-3 tsp. Adjust dosage as required.

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AND NOW...YOUR PATIENTS CAN HAVE ALL THE BENEFITS OF RYNATAN PLUS COUGH CONTROL, IN

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relieves not only the cough... but clears the entire breathing apparatus all-day or all-night with a single oral dose*

action: Rynatuss provides—

- **an effective antitussive** to inhibit nonproductive cough. It is non-narcotic, thus does not possess the depressive, constipating or habituating properties inherent in such antitussive agents as codeine. However, experimental tests have shown that the antitussive in Rynatuss is 1½ times as active as codeine in controlling the cough reflex.
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RYNATUSS SUSPENSION. Each 5 cc. contains: Carbetapentane tannate, 30 mg.; Chlorpheniramine tannate, 4 mg.; Ephedrine tannate, 5 mg.; and Phenylephrine tannate, 5 mg. **Children** under 6 years old ¼ to ½ tsp. twice daily; 6 years or older 1 or 2 tsp. twice daily.

DURABOND®, the only long-acting principle proven by radioactive tracer studies in human blood levels. (Bogner, R. L., and Moses, C.: Evaluation of a Sustained Release Principle in Human Subjects Utilizing Radioactive Technique, to be published, 1960.)

IRWIN, NEISLER & CO. • DECATUR, ILLINOIS

Concluded from page 77a

D) Trichinella spiralis.
E) Strongyloides stercoralis.

9. A marked increased in red cell fragility suggests:
A) Cooley's anemia.
B) Polycythemia vera.
C) Hand-Schuller-Christian disease.
D) Haff disease.
E) Congenital hemolytic anemia.

10. The most common nucleated cells in normal bone marrow are:
A) Reticulum cells.
B) Promyelocytes.
C) Macroblasts.
D) Megakaryocytes.
E) Metamyelocytes.

11. A decrease in the myeloid-erythroid ratio in the bone marrow is characteristic of:
A) A leukemoid reaction.
B) Pernicious anemia.
C) Gaucher's disease.
D) Aplastic anemia.
E) Multiple myeloma.

12. Bone marrow aspiration is of value in making a diagnosis of:
A) Schistosomiasis.
B) Strongyloidosis.
C) Leishmaniasis.

hearing improved...

tinnitus
and vertigo
relieved in
circulatory disturbances
of the
inner ear[1]



arlidin®
brand of nylindrin
hydrochloride N.N.D.

effective in twice as many patients

In patients with disturbances of the inner ear— impaired hearing, tinnitus or vertigo — Arlidin produced remission of their chief complaint in over 50% of cases. Rubin and Anderson state "we were very much encouraged, inasmuch as no other vasodilator that we have used has ever achieved more than a 25 per cent response."

"significant hearing improvement"

was obtained in 32 of the 75 patients studied.

rationale:

The clinicians note that impairment in hearing, disturbance in balance, and tinnitus involving the inner ear "may be explained on the basis of labyrinthine artery insufficiency" due to spasm or obstruction of the vessels. Arlidin was found to be "superior to all other vasodilating measures" in increasing blood flow through these vessels and in allaying spasm.

D) Clonorchis infestation.
E) Giardiasis.

13. A reticulocyte response such as occurs when a high dose of intramuscular vitamin B_{12} is given in pernicious anemia usually reaches its peak in:
A) 1-3 hours.
B) 6-24 hours.
C) 3-10 days.
D) 7-21 days.
E) 30-90 days.

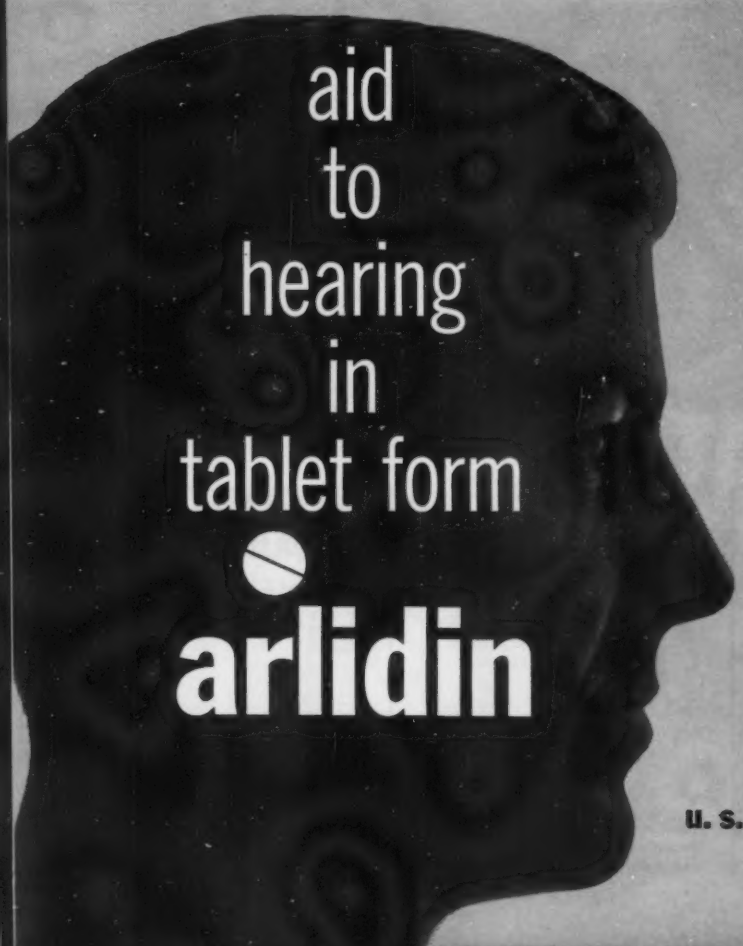
14. What the patient describes as 'smoky urine' usually is:
A) Galactosuria.
B) Hematuria.
C) Hemoglobinuria.
D) Pyuria.
E) Albuminuria.

15. A patient who is not unconscious but is unable to move a muscle, and has limbs that are plastic like those of a clay figure and, if placed passively in any posture, remains there, should be suspected of having:
A) Myasthenia gravis.
B) Pyknolepsy.
C) Hysteria.
D) Narcolepsy.
E) Catalepsy.

(Answers on page 232a)

VOLUME 2 MEDIQUIZ READY

A second volume of 150 Mediquiz questions, answers and references compiled by the Professional Examination Service, Division of the American Public Health Association is now available in booklet form for $1 per copy. The supply of booklets is limited. To be certain you get your copy, send your dollar now to: Professional Examination Service, Department 23-B, American Public Health Association, 1790 Broadway, New York, 19, N. Y. Specify "Volume 2." (A few copies of Volume 1 are available at $1 each for those who missed out on this valuable review aid.)



...“superior to all other vasodilating measures in its effect on the labyrinthine arteries.”

...efficacious where other vasodilators failed

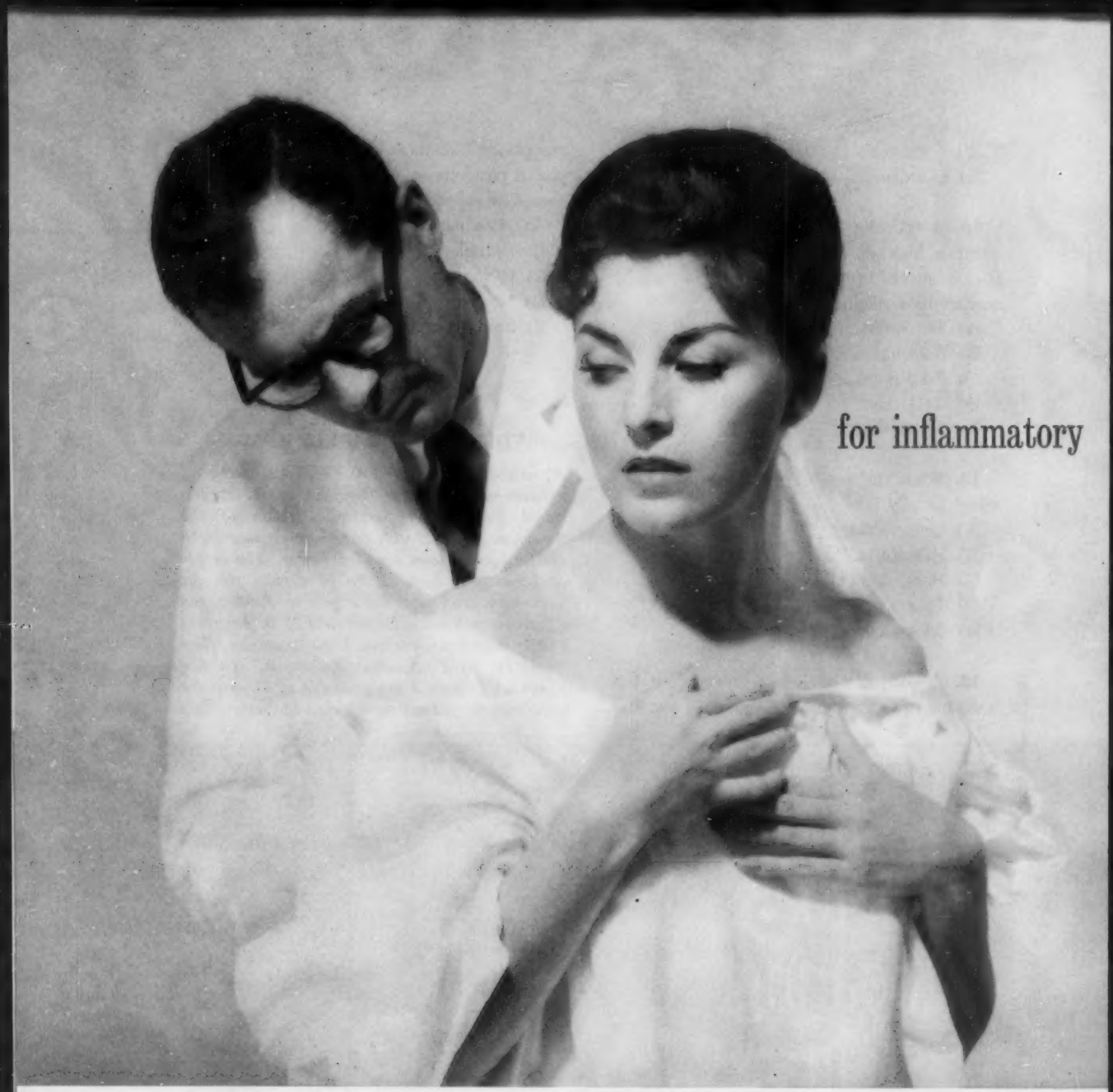


Arlidin is available in 6 mg. scored tablets, and 5 mg. per cc. parenteral solution. See PDR for dosage and packaging.

Protected by U. S. Patent Numbers: 2,661,372 and 2,661,373

1. Rubin, W., and Anderson, J. R.: Angiology 9:256, 1958.

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simple, sparing application – prompt, symptomatic relief –

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The anti-inflammatory and antipruritic efficacy of triamcinolone acetonide was shown by the prompt control of itching and resolution of affected areas. Cahn, M. M., and Levy, E. J.: A Comparison of Topical Corticosteroids: Triamcinolone Acetonide, Prednisolone, Fluoromethalone, and Hydrocortisone.

Antibiotic Med. & Clin. Ther. 6:734 [Dec.] 1959.

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SAFE for prolonged use

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Kestler, O.: Conservative Management of "Low Back Syndrome", J.A.M.A. 172: 2039 (April 30) 1960.

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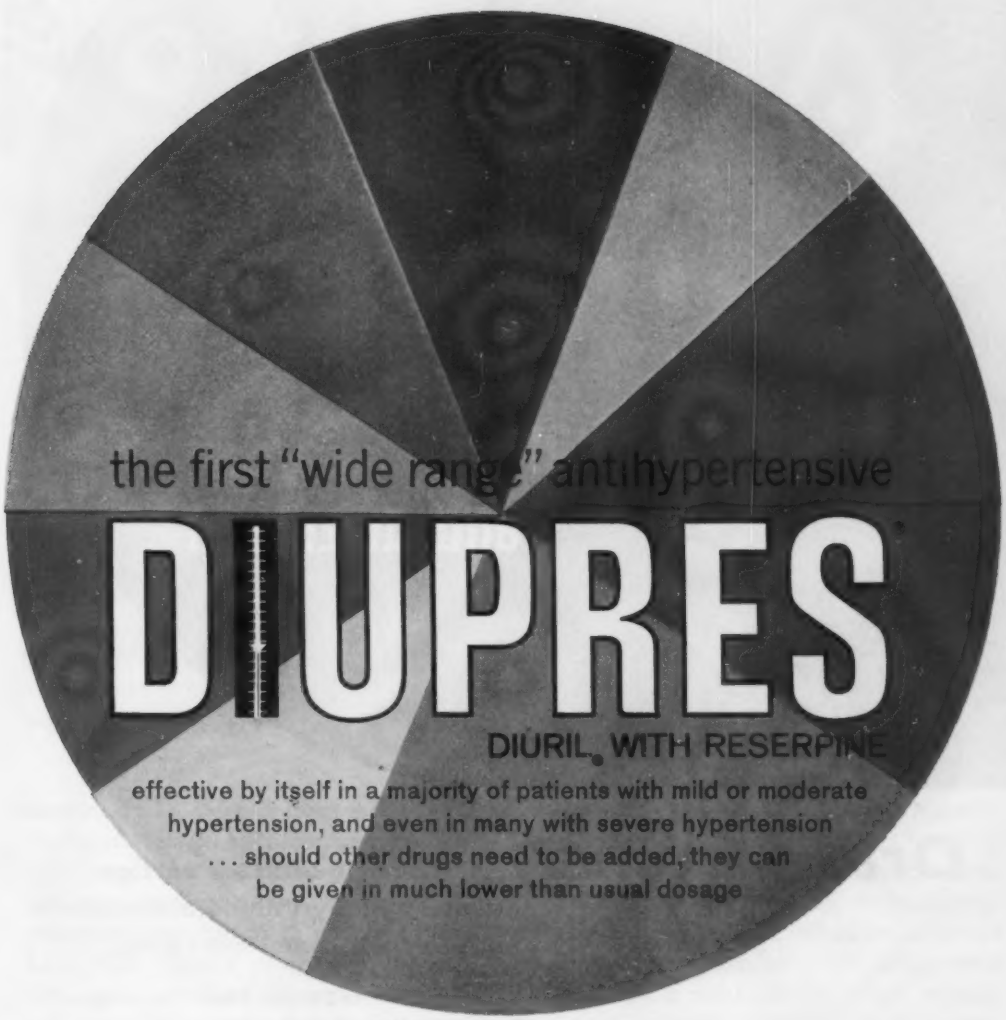
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also available for vertigo with anxiety and depression

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dimenhydrinate with *d*-amphetamine sulfate

controls symptoms . . . improves mood

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Camoprim, Parke, Davis & Company, Detroit, Michigan. Tablets, for adults, each containing Camoquin hydrochloride equivalent to 150 mg. amodiaquin, and primaquine diphosphate equivalent to 15 mg. primaquine base. Also supplied as Infatabs for children, each containing 75 mg. amodiaquin and primaquine diphosphate equivalent to 15 mg. base. An antimalarial preparation which is effective against all stages of the malarial parasite in humans. Intended for use as a suppressive, a prophylactic and as an agent in eradication programs. *Dose:* Dosage is regulated according to severity of infection, weight of the patient, and primary objective of therapy. *Sup:* Tablets or Infatabs in bottles of 100.

Dactil-Ob, Lakeside Laboratories, Inc., Milwaukee, Wisconsin. Yellow, sugar-coated tablets each containing 100 mg. piperidolate hydrochloride, 50 mg. ascorbic acid, and 50 mg. hesperidin complex. Indicated for the prevention of premature delivery, in all obstetrical cases where there is a history of unsuccessful pregnancies, or premature delivery or a diagnosis of the possibility of premature labor. *Dose:* One tablet four times daily beginning with the diagnosis of possible premature labor and continuing until the 39th week of gestation or until delivery. *Sup:* Bottles of 100.

Dantafur, Eaton Laboratories Division, The Norwich Pharmacal Company, Norwich, New York. Oral suspension of 15 mg./cc. of nitrofurantoin in a palatable vehicle. Indicated for the treatment of tracheopharyngitis and urinary tract infections in horses; canine tracheobronchitis and urinary tract infections in small animals. *Dose:* Administered perorally. Detailed dosage instructions supplies with package. *Sup:* Bottles of 1000 cc.

Deaner-100, Riker Laboratories, Inc., Northridge, California. Scored pink tablets each containing 100 mg. 2-dimethylaminoethanol as the para-acetamidobenzoic acid salt. Indicated for learning and behavior problems in

Continued on page 98a



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(sulfamethoxypyridazine, Parke-Davis)

Midicel®

When sulfa therapy is indicated, long-acting single-dose MIDICEL affords many significant clinical advantages: ECONOMY AND CONVENIENCE—1-tablet-a-day regimen reduces possibility of omitted doses, lets the patient sleep through the night. ENHANCED EFFECTIVENESS—rapid absorption together with slow excretion assures dependable bacteriostasis in urinary tract infections, certain respiratory infections, bacillary dysenteries, as well as surgical and soft tissue infections caused by sulfonamide-sensitive organisms. WELL TOLERATED—low dosage and high solubility minimize possibility of crystalluria.

Adult dosage: Initial (first day)—2 tablets (1 Gm.) for mild or moderate infections, or 4 tablets (2 Gm.) for severe infections. Maintenance—usually 1 tablet (0.5 Gm.) daily. **Children's dosage:** According to weight. See literature for details of dosage and administration. **Available:** Quarter-scored tablets of 0.5 Gm., bottles of 24, 100 and 1,000.

and for children... MIDICEL ACETYL SUSPENSION (N¹ acetyl sulfamethoxypyridazine, Parke-Davis) tempting butterscotch flavor and, of course, only one dose a day. **Children's dosage:** According to weight. **Available:** 250 mg. per 5 cc., in 4-oz. bottles.

Continued from page 95a

children. Helps the child's scholastic performance catch up with his intelligence. *Dose:* Recommended starting dose for school children is 3 tablets daily, taken as a single dose in the morning. *Sup:* Bottles of 50.

Chymotest, Testagar & Co., Inc., Detroit, Michigan. Injectable, each cc. of which contains Chymotrypsin, 5000 Testagar units of standardized and proteolytic activity. Indicated whenever systemic anti-inflammatory and anti-edema actions are desired; to combat inflammation and traumatic or inflammatory edema without any of the commonly encountered untoward hormonal or steroid reactions. *Dose:* 0.5 to 1.0 cc. deep into the muscle, preferably gluteal, once or twice daily as indicated. Reduce frequency of injection in accordance with patient's response. *Sup:* Multiple dose vials of 5 cc.

Decaspray, Merck Sharp & Dohme, Division of Merck & Co., Inc., Philadelphia, Pennsylvania. Topical aerosol containing, in each 90 Gm. container, 10 mg. dexamethasone and 50 mg. neomycin sulfate. Indicated in the treatment of allergic dermatoses, insect bites, sunburn, diaper rash, neurodermatitis, atopic dermatitis and pruritus ani. Administration: Apply to affected areas from a distance of about six inches. *Sup:* Aerosol containers of 90 Gm.

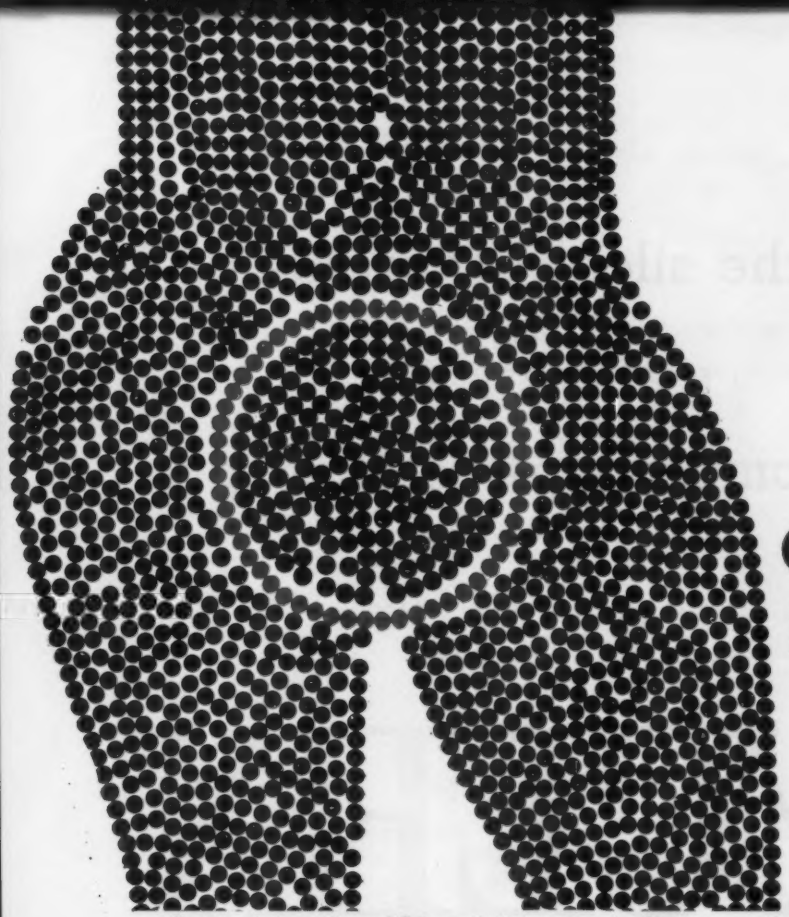
Desbutal Gradumet, Abbott Laboratories, North Chicago, Illinois. Long-acting dosage form, available in two sizes. Each 10 Gradumet contains 10 mg. Desoxyn and 60 mg. Nembutal; each 15 Gradumet contains 15 mg. Desoxyn and 90 mg. Nembutal. Indicated in obesity, to depress the appetite and calm the nervous overweight patient. Also helpful in managing psychosomatic complaints, tension and anxiety states, and mild neurotic conditions. *Dose:* Usual dosage is one tablet in the morning. *Sup.:* Either size in bottles of 100 and 500.

Es-A-Cort Lotion, Dome Chemicals, Inc., New York, New York. Each ounce contains 100,000 U.S.P. units vitamin A, 56,000 I.U. estrone and ½% micronized hydrocortisone alcohol. Indicated for rapid and effective relief of pruritus vulvae. Also useful in senile vulvovaginitis, postmenopausal vaginitis, kraurosis vulvae and related conditions. *Use:* Apply sparingly to affected area twice daily. *Sup:* Bottles of ½ oz. and 2 oz.

Mysteclin-F Capsules, E. R. Squibb & Sons, Division of Olin Mathieson Chemical Corp., New York, New York. Each capsule contains tetracycline phosphate complex equivalent to 250 mg. tetracycline hydrochloride and 50 mg. amphotericin B. Also available in half-strength capsules. Indicated to provide simultaneous antimicrobial therapy and antimonilial prophylaxis. *Sup:* Full strength capsules in bottles of 16 and 100; half-strength in bottles of 16.

Neo-Medrol, The Upjohn Company, Kalamazoo, Michigan. Ointment or drops, each cc. or Gm. containing 1 mg. methylprednisolone and 5 mg. neomycin sulfate. Indicated in eye conditions such as marginal ulceration, phlyctenular keratoconjunctivitis, nonspecific superficial keratitis, herpes zoster ophthalmicus, acne rosacea keratitis, allergic conjunctivitis, corneal abscesses, deep keratitis, sclerokeratitis, episcleritis, postoperative keratitis and postoperative and post-traumatic uveitis. Indicated for external ear canal in seborrheic dermatitis, contact dermatitis and infected eczematoid

Concluded on page 104a



CONSISTENT RESPONSE IN VAGINAL INFECTIONS

antibacterial, antimonilial, antitrichomonal effects—optimal dispersion, prolonged retention

85% success:[1,2] Triburon Chloride—the clinically proven microbicide—provides rapid symptomatic relief as well as control of trichomonal, monilial and non-specific vaginitis. In one study,[1] discharge, itching and burning disappeared in 67 of 73 women after only 3 or 4 applications; after two weeks, cultures were negative in 61 patients. Similar results were noted in another series of 55 women.[2]

now available in two forms

New TRIB VAGINAL SUPPOSITORIES provide the efficacy of Triburon Chloride in a water-soluble, self-emulsifying base that enhances dispersion and prolongs therapeutic effects, even in the presence of profuse discharge. TRIB VAGINAL SUPPOSITORIES are provided with reusable plastic applicators.

Proven TRIBURON VAGINAL CREAM—white, nonstaining, virtually non-irritating to the vaginal mucosa, with no hint of medicinal odor. Disposable applicators are supplied with the cream.

Indications: TRIB VAGINAL SUPPOSITORIES and TRIBURON VAGINAL CREAM for vulvitis and vaginitis due to Trichomonas vaginalis, Candida albicans, Hemophilus vaginalis as well as mixed infections; after cauterization, conization and irradiation; for surgical and postpartum treatment. Therapy may be continued during pregnancy and menstruation.

Supplied: TRIB VAGINAL SUPPOSITORIES—Boxes of 24, with reusable applicator. TRIBURON VAGINAL CREAM—3-ounce tubes with 18 disposable applicators. Consult literature for dosage requirements, available on request, before prescribing.

References: 1. N. Mulla and J. J. McDonough, Ann. New York Acad. Sc., 82: (Art. 1), 182, 1959. 2. L. E. Savel, D. B. Gershenfeld, J. Finkel and P. Drucker, ibid., p. 186.

ROCHE LABORATORIES
Division of Hoffmann-LaRoche Inc.

NEW Trib T.M.

Contains Triburon Chloride 0.1%

VAGINAL SUPPOSITORIES
Triburon® Vaginal Cream

decisive microbicidal therapy in a delicate matter
not an antibiotic • not a nitrofuran

for the silent syndrome*...

the unmentioned edema, mood changes, GI distress, preceding menstruation

a comprehensive therapy

NEW



CYCLEX®

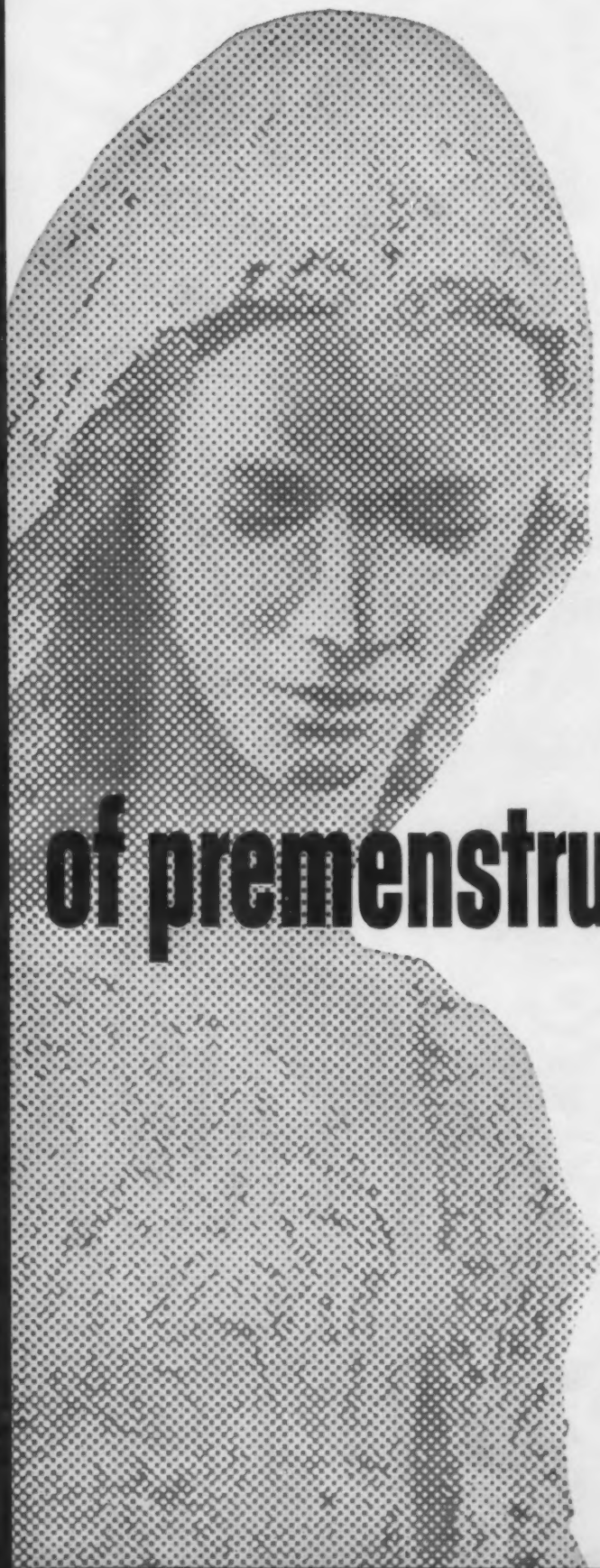
HYDRODIURIL® WITH MEPROBAMATE
HYDROCHLOROTHIAZIDE

to relieve the symptoms

for EDEMA...
CYCLEX provides the prompt diuresis of HYDRODIURIL for rapid reduction of weight gain, breast fullness, abdominal congestion

for MOOD-CHANGES...
CYCLEX supplies the effective relief of meprobamate for nervousness, irritability, tension, nausea, malaise, insomnia

for GI DISTRESS...
CYCLEX affords quick-acting relief of nausea and bloating associated with premenstrual tension.



of premenstrual tension

INDICATION: **CYCLEX is indicated for the relief of premenstrual tension with edema.**

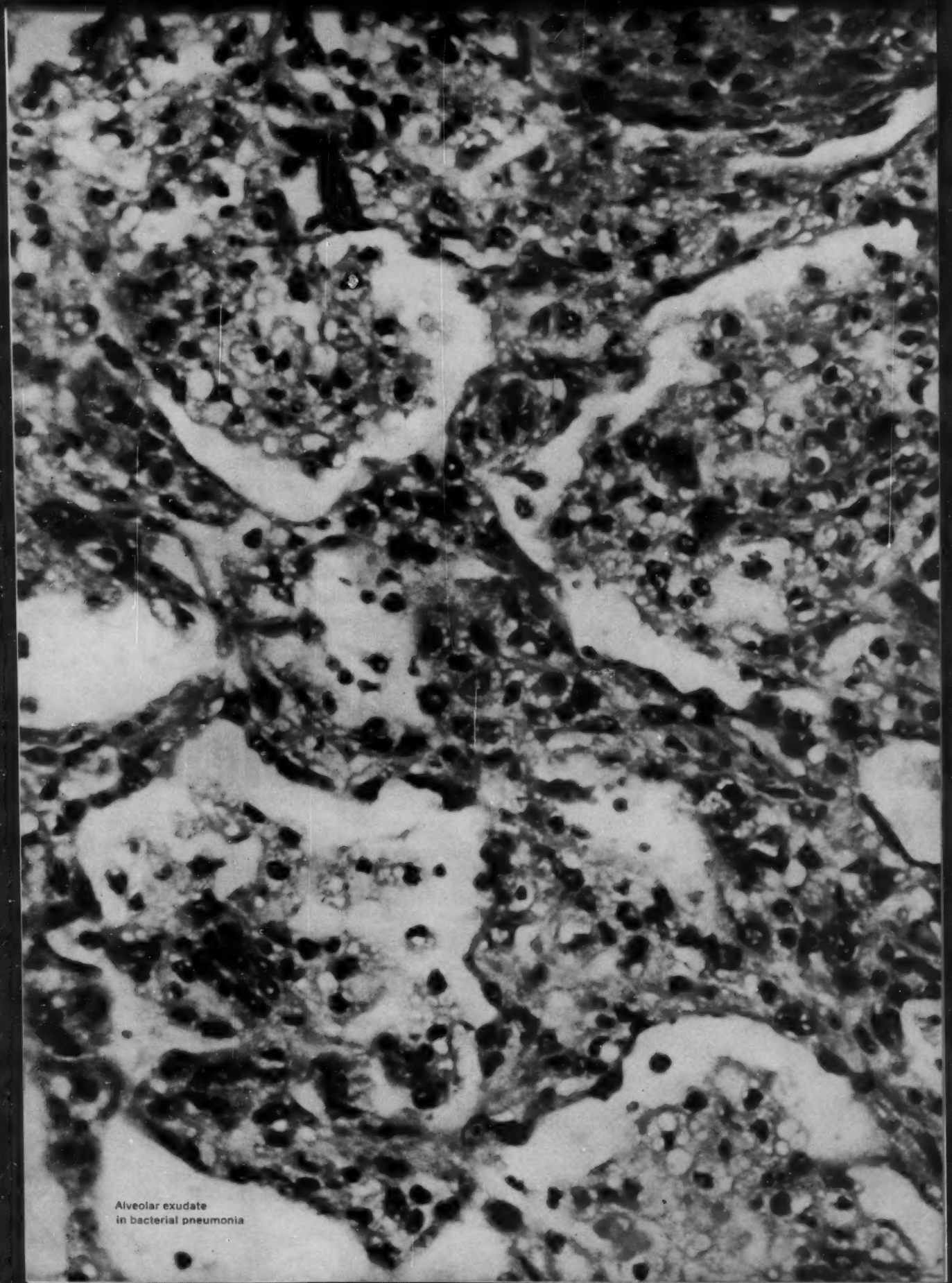
USUAL DOSAGE:
One CYCLEX Tablet 1 or 2 times daily, beginning when symptoms appear and continuing until the onset of menses.

SUPPLIED: **CYCLEX Tablets are supplied in bottles of 100. Each tablet contains 25 mg. of hydrochlorothiazide and 200 mg. of meprobamate.**

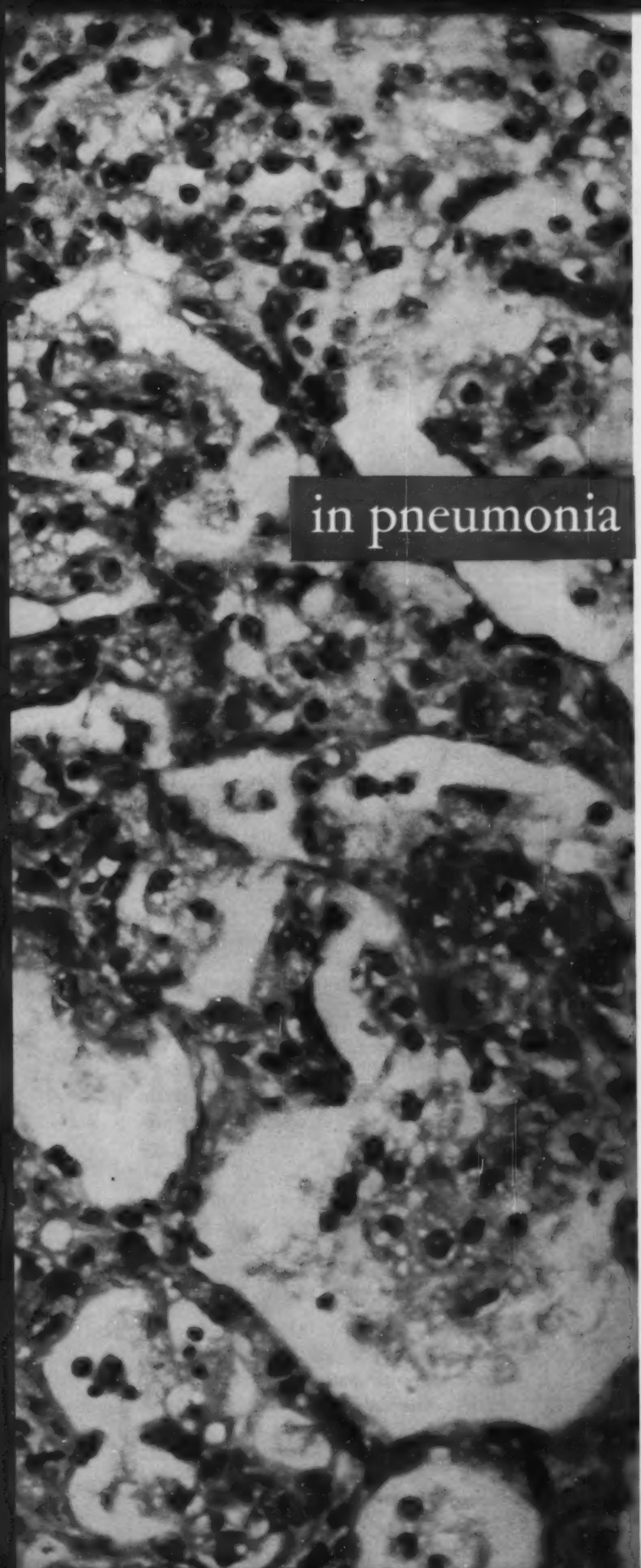
Additional information on CYCLEX is available to physicians on request.

CYCLEX and HYDRODIURIL are trademarks of Merck & Co., INC.

MERCK SHARP & DOHME
Division of Merck & Co., INC.
West Point, Pa.



Alveolar exudate
in bacterial pneumonia



Therapeutic confidence

Panalba is effective against more than 30 commonly encountered pathogens including staphylococci resistant to other antibiotics. Right from the start, prescribing it gives you a high degree of assurance of obtaining the desired anti-infective action in this as in a wide variety of bacterial diseases.

Supplied: Capsules, each containing Panmycin* Phosphate (tetracycline phosphate complex), equivalent to 250 mg. tetracycline hydrochloride, and 125 mg. Albamycin,* as novobiocin sodium, in bottles of 16 and 100.

*Trademark, Reg. U. S. Pat. Off.

The Upjohn Company
Kalamazoo, Michigan

Upjohn

Panalba*

your broad-spectrum antibiotic of *first* resort

Concluded from page 98a

dermatitis. *Dose:* As directed by physician. *Sup:* Drops in bottles of 5 cc., ointment in tubes of ⅛ oz.

Rautrax-N, E. R. Squibb & Sons, Division of Olin Mathieson Chemical Corp., New York, New York. Capsule-shaped tablets, each containing 50 mg. Raudixin, 4 mg. Naturetin, and 400 mg. potassium chloride. Indicated for the management of all degrees of essential hypertension. *Dose:* As directed by physician. *Sup:* Bottles of 100.

Riopan, Ayerst Laboratories, Inc., New York, New York. Monalium hydrate (hydrated magnesium aluminate). Indicated in conditions associated with gastric hyperacidity, such as gastric or duodenal ulcer, gastritis, heartburn, gastrointestinal disturbances resulting from dietary indiscretions, nervous disorders, food intolerances, excessive smoking or alcoholic stimulation. *Dose:* One or two tablets *swallowed* with water as required, preferably between meals and at bedtime. One or two teaspoonfuls of suspension with water as required, preferably between meals and at bedtime. *Sup:* 400 mg. tablets in packages of 60 and 500, in individual filmstrips of 10 tablets. Mint-flavored suspension, each teaspoonful of which contains 400 mg. monalium hydrate, in bottles of 12 oz.

Rynatuss, Irwin, Neisler & Co., Decatur, Illinois. Long-acting non-narcotic antitussive-decongestant available in two dosage forms —tabules, each containing 60 mg. carbetapentane tannate, 5 mg. chlorpheniramine tannate, 10 mg. ephedrine tannate, and 10 mg. phenylephrine tannate; or suspension containing in each 5 cc. 30 mg. carbetapentane tannate, 4 mg. chlorpheniramine tannate, 5 mg. ephedrine tannate and 5 mg. phenylephrine. Both forms employ the Durabond principle of oral repository release. Indicated in cough, mild or severe, acute or chronic; in head or chest congestion, colds, sinusitis, bronchitis. *Dose:* Adults and children 12 years and older, one to two tabules each 12 hours. Children 6-11 years, ½ to 1 tabule each 12 hours. *Sup:* Tabules in bottles of 30; suspension in bottles of 8 oz.

Striatran, Merck Sharp & Dohme, Division of Merck & Co., Inc., Philadelphia, Pennsylvania. Emylcamate, 200 mg. per tablet. New, highly effective tranquilizing agent for relieving mild anxiety and tension. Primarily a tranquilizer, it has some muscle-relaxant activity. *Dose:* Usual adult dose is one tablet three to four times daily, immediately before meals. *Sup:* Pink tablets in bottles of 100.

Trib Vaginal Suppositories, Roche Laboratories, Division of Hoffmann-La Roche Inc., Nutley, New Jersey. New dosage form of Triburon for the treatment of vaginal and cervical infections. Each suppository contains 0.1% Triburon. Usual dosage is one suppository, to be inserted morning and night. May be used during pregnancy and menstruation. *Sup:* Boxes of 24, with reusable applicator.

Tryptest, Testagar & Co., Inc., Detroit, Michigan. Injectable, each cc. of which contains 12,500 Testagar units of standardized proteolytic activity. Indicated whenever systemic anti-inflammatory and anti-edema actions are desired; to combat inflammation and traumatic or inflammatory edema without any of the commonly encountered untoward hormonal or steroid reactions. *Dose:* 0.5 to 1.0 cc. deep into the muscle, preferably gluteal, once or twice daily as indicated. Reduce frequency of injection in accordance with patient's response. *Sup:* Multiple dose vials of 5 cc.

in arthritis and allied disorders

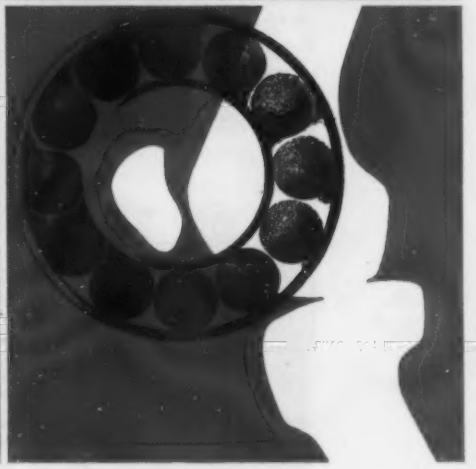
Butazolidin®

Geigy

Proved by a Decade of Experience
Confirmed by 1700 Published Reports
Attested by World-Wide Usage

Since its anti-inflammatory properties were first noted in Geigy laboratories 10 years ago, time and experience have steadily fortified the position of Butazolidin as a leading nonhormonal anti-arthritic agent. Indicated in both chronic and acute forms of arthritis, Butazolidin is noted for its striking effectiveness in relieving pain, increasing mobility and halting

Butazolidin®, brand of phenylbutazone: Red, sugar-coated tablets of 100 mg. Butazolidin® Alka: Orange and white capsules containing Butazolidin 100 mg.; dried aluminum hydroxide gel 100 mg.; magnesium trisilicate 150 mg.; homatropine methylbromide 1.25 mg.



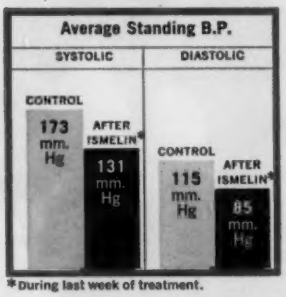
162-60

ISMELIN® *reduces high blood pressure to*

According to reports from more than 100 clinical investigators, Ismelin—in moderate to severe hypertension—reduces blood pressure levels to normal or near-normal in a remarkably high percentage of patients. Following are summaries of typical findings:

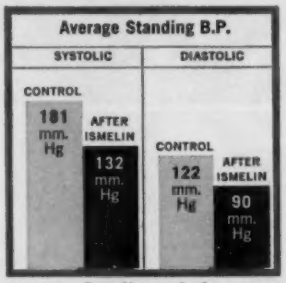
17 of 18 patients (94.4%) treated with Ismelin become normotensive in the erect position. Page and Dustan[1] gave Ismelin orally, alone or in combination with other antihypertensive drugs, to 18 patients daily for 2 to 10 weeks.

RESULTS: All 18 patients had reductions in standing blood pressure; 16 had moderate reductions in supine blood pressure as well. In 17 of the 18 cases, blood pressure levels became normal or near-normal in the erect position.



*During last week of treatment.

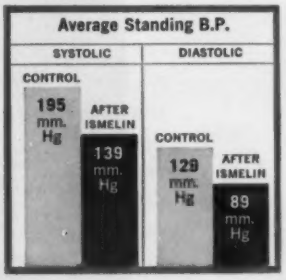
In 14 of 15 patients (93.3%) on Ismelin, blood pressure reduced to normal or near-normal levels in the standing position. Ismelin was administered orally by Frohlich and Freis[2] for 4 to 9 weeks to 15 male patients selected from the hypertensive clinic.



RESULTS: Ismelin evoked a potent antihypertensive response in the erect position: the blood pressure of 14 of the 15 patients dropped to normotensive or near-normotensive levels.

"The response [to Ismelin] was characterized by a potent, orthostatic, antihypertensive effect similar to that seen with the ganglionic blocking drugs but without the side-effects of parasympathetic blockade."[2]

In 15 of 18 subjects (83.3%), guanethidine [Ismelin] reduced high blood pressure to near-normotensive levels. Guanethidine [Ismelin] was administered orally by Richardson and Wyso[3] to 18 male hospitalized patients with hypertension.



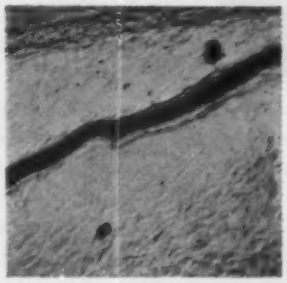
References: 1. Page, I. M., and Dustan, H. P.: J.A.M.A. *170*:1265 (July 11) 1959. 2. Frohlich, E. D., and Freis, E. D.: M. Ann. District of Columbia *28*:419 (Aug.) 1959. 3. Richardson, D. W., and Wyso, E. M.: Virginia M. Month. *86*:377 (July) 1959. 4. Brest, A. N., and Moyer, J. H.: J.A.M.A. *172*:1041 (March 5) 1960. 5. Page, I. H.: Postgrad. Med. *27*:448 (April) 1960. 6. Kirkendall, W. M., Fitz, A. M., Van Hecke, D. C., Wilson, W. B., and Armstrong, M. L.: Paper presented at a Symposium on Guanethidine (Ismelin), The University of Tennessee College of Medicine, Memphis, Tenn., April 22, 1960. 7. Leishman, A. W. D., Matthews, H. L., and Smith, A. J.: Lancet *2*:1044 (Dec. 12) 1959.
Additional References: 8. Brest, A. N., Duarte, C., Glantz, G., and Moyer, J. H.: Current Therap. Res. *2*:17 (Jan.) 1960. 9. Maxwell, R. A., Mull, R. P., and Plummer, A. J.: Experientia *15*:267 (July 15) 1959. 10. Maxwell, R. A., Plummer, A. J., Schneider, F., Povalski, H., and Daniel, A. I.: J. Pharmacol. & Exper. Therap. *128*:22 (Jan.) 1960. 11. Maxwell, R. A., Plummer, A. J., Schneider, F., Povalski, H., and Daniel, A. I.: Pharmacologist *1*:58 (Fall) 1959. 12. Sheppard, H., and Zimmerman, J.: Pharmacologist *1*:69 (Fall) 1959.

near-normal levels in 80 to 90% of cases[1-3]

RESULTS: "All patients showed definite reduction in blood pressure coincident with administration of [Ismelin]. In most of the subjects [15] standing blood pressure could be maintained near normal levels."[3]

"Side-effects encountered . . . have indeed been minimal . . ."[4] Brest and Moyer[4] state: "Side-effects [of Ismelin] encountered to date have indeed been minimal, with mild diarrhea as the only significant complaint even when large daily doses (450 mg.) of the drug are administered. No evidence of toxic action of the drug has been encountered thus far." Page[5] observes: "...Guanethidine [Ismelin] has the advantage [over ganglionic blockers] in that it is much easier to handle and does not produce nearly as much dose sensitivity. Too much of a ganglion-blocking agent will really 'clobber' the patient; with Guanethidine, there is much more leeway." Kirkendall and co-workers[6] report: "Guanethidine has remarkably few side effects. The absence of symptoms of parasympathetic blockade makes its use better tolerated by most patients than conventional ganglion blocking therapy." Leishman and associates[7] conclude: "The capacity of guanethidine to reduce the blood-pressure of hypertensive patients without symptoms of parasympathetic blockade is consistent with a mechanism of selective sympathetic-nerve inhibition..."





Ismelin
Increases Arteriole Caliber

Ismelin represents a new principle in the treatment of high blood pressure: It acts at the nerve-arteriole junction where it apparently opposes the release and/or distribution of the pressor substance, norepinephrine. Ismelin is not a ganglionic blocker.

◀ BEFORE ISMELIN: Photo shows normal arteriole in rat mesentery. (100x)

◀ AFTER ISMELIN: Ismelin has blocked the constricting influence of norepinephrine. Arteriolar caliber has significantly increased, while an adjacent capillary has filled. (100x)

Because it acts at the nerve-arteriole junction—with no demonstrable central or ganglion blocking effect—Ismelin produces a clear-cut antihypertensive response in a high percentage of cases.

For complete information on precautions, dosage, and side effects, write to Medical Service Division, CIBA, Summit, New Jersey.

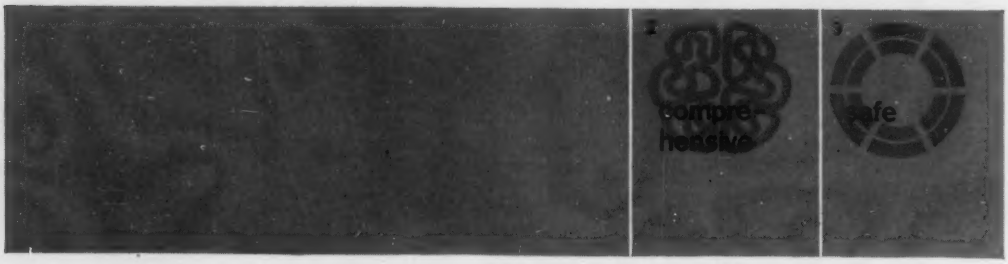
Supplied: ISMELIN *Tablets*, 10 mg. (yellow, scored) and 25 mg. (white, scored); bottles of 100. /2157 MR

ISMELIN® sulfate (guanethidine sulfate CIBA)

ISMELIN



CIBA
Summit, New Jersey



1

fast-
acting*

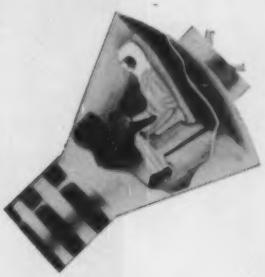
Nembutal®

(Pentobarbital, Abbott)

*Nembutal rapidly produces cerebral depression of any desired degree, depending upon the dose.

ABBOTT

Aviation Medicine to Space Medicine in Four Decades

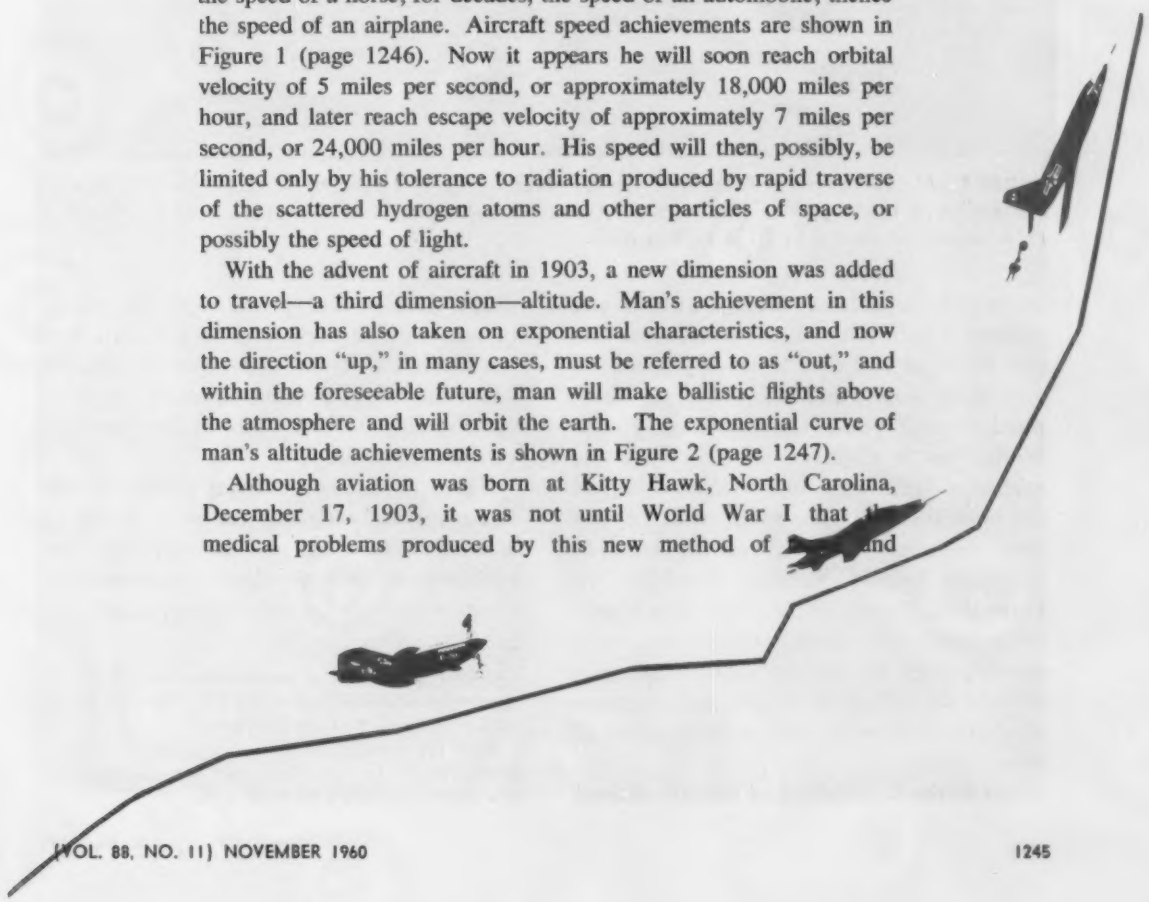


COLONEL PAUL A. CAMPBELL, U.S.A.F., M.C.
Brooks Air Force Base, Texas

Almost every curve depicting human progress seems to be rapidly assuming exponential characteristics. This is especially true of those of human travel. Man was, for eons of time, limited to the speed of his own locomotive apparatus; for centuries limited to the speed of a horse; for decades, the speed of an automobile; thence the speed of an airplane. Aircraft speed achievements are shown in Figure 1 (page 1246). Now it appears he will soon reach orbital velocity of 5 miles per second, or approximately 18,000 miles per hour, and later reach escape velocity of approximately 7 miles per second, or 24,000 miles per hour. His speed will then, possibly, be limited only by his tolerance to radiation produced by rapid traverse of the scattered hydrogen atoms and other particles of space, or possibly the speed of light.

With the advent of aircraft in 1903, a new dimension was added to travel—a third dimension—altitude. Man's achievement in this dimension has also taken on exponential characteristics, and now the direction "up," in many cases, must be referred to as "out," and within the foreseeable future, man will make ballistic flights above the atmosphere and will orbit the earth. The exponential curve of man's altitude achievements is shown in Figure 2 (page 1247).

Although aviation was born at Kitty Hawk, North Carolina, December 17, 1903, it was not until World War I that the medical problems produced by this new method of [illegible] and



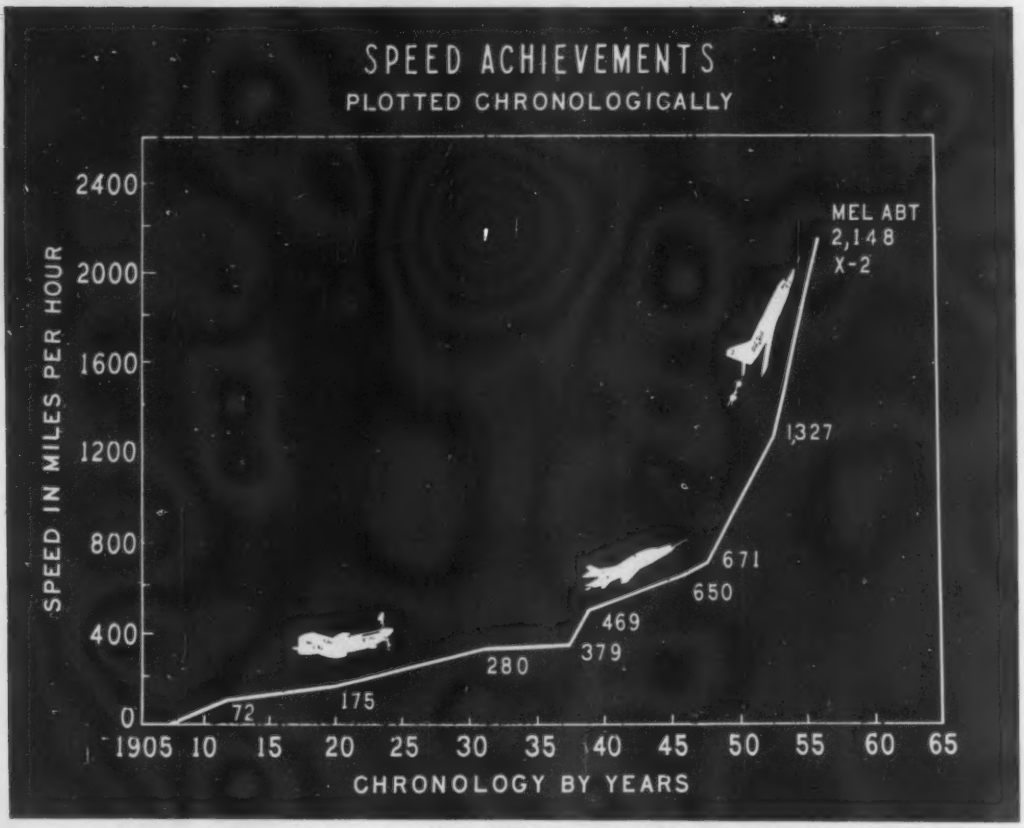


FIGURE 1 Aircraft speed achievements plotted chronologically, beginning with the Wright Brothers and ending with Mel Apt's flight at a speed of 2,148 miles per hour. Joseph A. Walker, August 4, 1960, raised this record to 2,196 mph in X-15.

instrument of defense became evident and resulted in the birth of aviation medicine. This new aspect of medicine, although practiced as a specialty since World War I, became recognized through board certification only after World War II (February 8, 1953). As the science of flight began to extend itself beyond the earth's atmosphere, space medicine was born (February 9, 1949, at the U.S.A.F. School of Aviation Medicine, Randolph Air Force Base, Texas). What comes next is anyone's guess. But progress of this type most certainly does not remain static. The space effort is the will of the people and a reasonable, logical stepping stone in the progress of man.

Just as the development of aviation allowed man to achieve atmospheric flight, the science of rocketry will allow him to achieve extra-atmospheric or space flight. Just as aviation has made three-dimensional flight possible, rocketry may eventually take us into Einstein's Fourth Dimension.

Those physicians practicing aviation medicine recognized early that one could do little to alter man to make him more effective in his new environment. Thus, they began to devote their efforts toward his careful selection, indoctrina-

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Colonel Campbell is at present Assistant to the Commander for Advanced Studies, U.S.A.F. Aerospace Medical Center, Brooks Air Force Base, Texas.

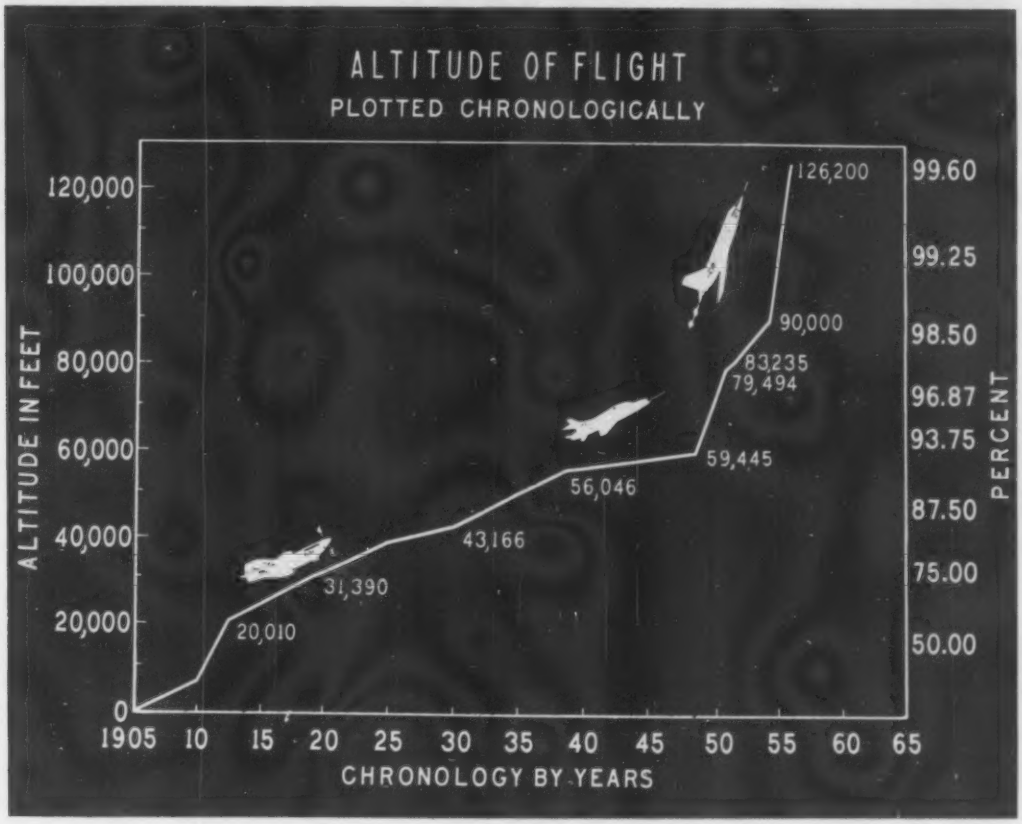
Note: The contents of this manuscript reflect the personal views of the author and are not to be construed as a statement of official Air Force policy.

tion, and then his protection through the development of environments which he could take along. As man's travels have extended toward space it has been recognized that he can, within reasonable limits, go almost any place with portable environments and can, through his ingenuity, develop sensors which can sense situations which are not within the capability of his own sensorium and which will warn him of new situations with which he must cope.

As is well known, conventional aircraft require air (atmosphere) for aerodynamic support, for fuel combustion, and for a media for propellers to pull or push their way through. This same air, in turn, produces friction and thus decreases efficiency. On the other hand, a rocket supports itself by its propellent, needs no atmosphere for combustion, as it carries its own oxidizer, and it needs no atmosphere to push or pull itself through, as it operates according to the Newtonian principle of action and reaction being equal and opposite—like the kick of a shotgun—so to speak. Thus the rocket is more effective above the atmosphere than in the atmosphere, and thus a vehicle capable of space travel has been born, and man's unsatiable curiosity to find what lies beyond the clouds, the moon and the stars, will lead him to use it.

But what does this do to man and how does he prepare himself for these rapid changes? Most of the problems of *conventional* aviation medicine have been adequately solved through interdisciplinary effort between physicians, en-

FIGURE 2 Man's altitude achievements plotted chronologically. The final point on the graph is Kincheloe's flight, reaching an altitude of 126,200 feet. On August 12, 1960, Maj. Robert White raised this record to 136,500 ft.



gineers, biologists, etc. Many of the problems during the evolution of aviation and aviation medicine were considered to be barriers. Within my time, I have seen the oxygen barrier, the bends barrier, the sound barrier, and the thermal barrier, all at one time or another predicted to be insurmountable, lower their bars, so to speak, as the science of aviation and/or aviation medicine met the barrier head on by some new scientific or industrial achievement.

A few of these barriers which have appeared insurmountable from time to time appear in the following table, in which the first column defines the barrier, the second column states the problem, and the third column delineates the achievement by which the barrier was circumvented.

The next barriers now lying across our horizons include, among many others: the Space Barrier (Aeropause); The Radiation Barrier (Van Allen Belts); the Newell Barrier and the Speed-of-Light Barrier.

The space barrier, if indeed we consider this barrier to represent the areas in which the atmosphere no longer lends aerodynamic support, combustion support, and life support—called by some, the aeropause—has already been crossed by numerous vehicles and by the Soviet dogs. Project Mercury has as its objective the placing of an orbiting man across the barrier. The Van Allen Radiation Belts, whose existence was not known two years ago, the Newell barrier and the speed-of-light barrier will all be mentioned later.

The Earth's Atmosphere

Since the presence or the absence of the earth's atmosphere accounts in one way or another for many of our problems, let us consider its structure. According to the structure of the atmosphere as presently conceived, density decreases rapidly as altitude is attained. About 90 percent of the mass of the atmosphere lies within the first 10 miles above the earth and almost 99 percent of it lies within the first 20 miles. The remaining one percent may extend to 6,000, or possibly even 60,000, miles depending upon how carefully one wishes to look for an atom or a molecule identifiable with the earth. The aurora borealis is probably the highest perceivable earthly phenomena. It is due to solar particles striking the uppermost layers of the earth's atmosphere. From a practical standpoint, less than 1/10,000 of one percent of the atmospheric mass remains at 90 miles. Functional space is considered by many scientists to begin in the neighborhood of 120 miles of altitude as at this level significant aero-

BARRIERS

APPARENT BARRIER	PROBLEM	ACTUAL SOLUTION
Altitude 15,000 to 18,000 ft.	Anoxia	Oxygen systems
Altitude 38,000 to 42,000 ft.	Anoxia in spite of 100% breathing oxygen	Pressure breathing and pressure cabins
Altitude 33,000 ft. Upward	Aeroembolism	First pre-breathing of oxygen Later pressurized cabins
Altitude 80,000 ft. Upward	Limit of economical pressurization	Sealed cabin
Speed of Sound	Loss of control Buffeting Disintegration of aircraft	Redesign of airfoil and new propulsion methods
Thermal Barrier	Heating of aircraft and interior due to atmospheric friction	Improvement of design, materials, and air conditioning

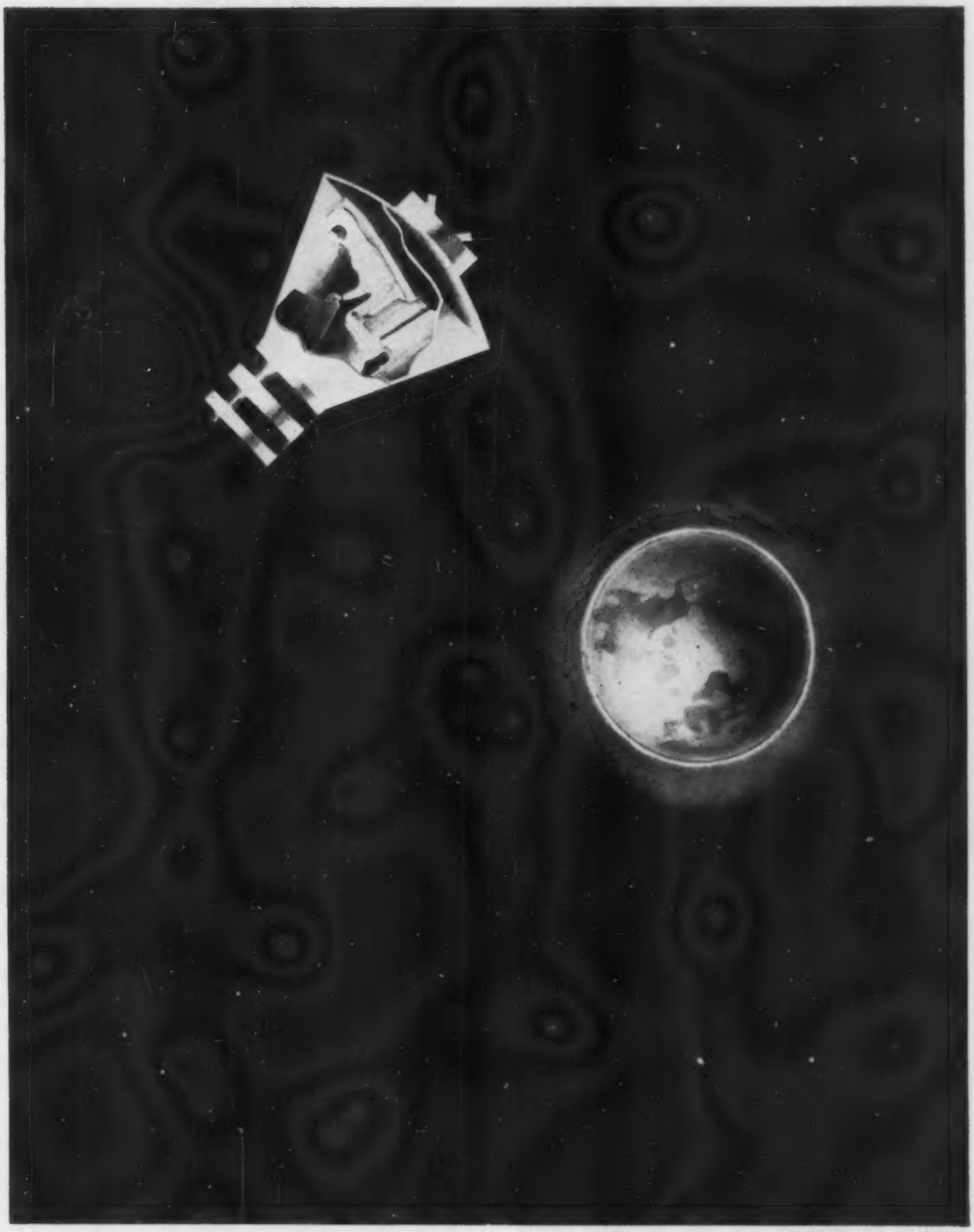


FIGURE 3 Artist's conception of a capsule similar to the Mercury capsule orbiting the earth.

dynamic drag or friction to passage is lost almost in its entirety. In fact, drag is so slight at this height that, according to estimations, considerable periods of orbital travel around the earth would result in only small losses of altitude. This altitude, incidentally, will be approximately the altitude of the manned orbital vehicle of Project Mercury.

Atmospheric temperature decreases with altitude averaging about 1°F for each 300 feet until, depending on latitude, time of year, etc., an altitude of about 7 miles is reached. The temperature above this altitude remains relatively constant at —55°C(—67°F) to about 20 miles, at which altitude it begins to warm considerably, reaching approximately 76°C(170°F) at 31 miles. Again, temperature remains more or less constant for the next 7 miles; then from 30 to 50 miles of altitude it drops to —33°C(—27°F) and remains more or less constant for a few miles. At about this level, the atmosphere becomes so rarefied that heat can no longer be transferred to it. Consequently, the temperature of any object is that due to heat from radiation which is mostly of solar origin. Thus, temperature depends upon the reflective or absorptive characteristics of the object. Temperatures may reach extremes depending upon these characteristics of the exposed surfaces; that is, whether they are bright or dull and whether they are reached by the direct rays of the sun or are in their own or the earth's shadow. Fortunately for the future space traveller, the reflection and absorption characteristics of the skin of vehicles can be balanced in such a manner that it can be kept within tolerable limits for most flights.

It is the presence of this benevolent atmosphere which makes life on earth possible. It furnishes to us, and transports to us, the oxygen, nitrogen, carbon dioxide, and water vapor, which we need for life support. Its movement through the phenomena of wind, gives us our natural air conditioning and produces homogeneity. It pressurizes us to just the proper degree. It diffuses light so we have gray shadows rather than stark black ones, and we have twilight periods rather than sudden blackness.

It is this same benevolent atmosphere which protects us from the dazzling light of the sun shining as a blinding orb framed in the absolute blackness of a night-like sky. It is this same atmosphere which protects us from the searing infrared portion of the sun's spectrum and the erythemia producing ultraviolet portion. It is this same atmosphere whose mass and chemistry protect us from cosmic radiation, solar x-radiation, and the dust and other rubble of space spewed at the earth or in the path of the earth with energies which at times are almost incomprehensible. It is this same benevolent atmosphere which is denied us as aviation changes into space flight and aviation medicine changes into space medicine.

On the debit side of the ledger, the atmosphere has kept us earthbound, as we are only now learning to get along without it through environmental substitution. It produces the friction which has slowed and has heated high velocity vehicles which attempt to traverse it. Its exponentially increasing density heats and decelerates a space vehicle almost to the limits of tolerance during reentry.

Ecology

Man has evolved as a link in the earth's extremely complex ecological system in which he takes from the earth and its thin atmospheric shell, and from the sun that which is required for life. He takes the materials which make up his body and those which nurture him. He takes his oxygen from the photosynthetic processes of plants energized by the sun, and in turn repays by giving his carbon dioxide to the plants to complete the cycle. He receives his nourishment from the earth and returns his excreta. Eventually, his body is returned to the earth and the complex interplay of materials and energies complete the cycle.

Away from the earth and above the atmosphere, the same man must live in a fabricated world of very small dimensions (Figure 3). If the trip is to be a short one, the materials can be packaged in the state in which they are used. If the trip is a long one, he will have to improvise, so far as possible, his own ecological

system, as re-supply becomes impossible and even the riddance of excreta and garbage become difficult. All of the packaging or the apparatus required for closing the ecological loop or for destruction of those things which cannot be used, must be done within the framework of miniaturization, weight minimization, conservation, and the multiple use of everything possible. An example of multiple usage might apply to water, which can be used as a coolant, heat and radiation shielding, protection against acceleration, and for drinking purposes. Multiple usage will be necessary as each pound of payload may require hundreds or thousands of pounds of fuel and structure to lift it into space, or to complete a space mission. Each pound of payload saved can be used to gain greater distance, greater time duration, and possibly greater protection.

Other Problems

Now, what are some of the other problems which require medical, biological, bioastronautical, biophysical, physiological or psychological solution as aviation is extended into space?

An interesting situation is that of weightlessness which man, the vehicle, and the contents of the vehicle will experience during space flight. Weightlessness under these circumstances is a function of speed while in orbital or elliptical paths when the centrifugal or fly-away tendency of the vehicle is exactly neutralized by gravitational pull during the period when there is no acceleration produced by drive, or deceleration produced by drag. This is a complicated statement but the situation is complicated and the condition, as reflected in man and machine, is complicated.

At least a portion of the complexity is due to inability to simulate the weightless or gravity-free state on earth for more than seconds or minutes. Consequently, only a small part of the story is known. Through free-fall and through parabolic flights in high-speed aircraft man has been exposed to the gravity-free state for a period up to about a minute.

However, during the short exposures, the problems do not seem too great. When one at-



FIGURE 4 Difficulties in drinking water from an ordinary container during flight in the weightless state. It can be seen that the water forms uncontrollable globules.

tempts to extrapolate the conclusions which can be drawn from multiple flights up to 60 seconds, each, into flights lasting hours, days, or weeks, the results are simply invalid and the answer must await longer periods of experience.

As is well known, human orientation is the result of central nervous system integration of information from the so-called balance triad—the eyes, the inner ear, and the deep muscle and visceral sensibility. An intact function of two of these elements is considered necessary for normal orientation. As the inner ear and deep muscle and visceral sensibility are gravity-dependent, it was thought by many that orientation would be affected by the gravity-free state. In the short periods of study to date, there has been no serious evidence or disorientation in those who have had considerable previous air experience. For the most part, they have learned to use their eyes as the dominant part of the triad. As long as they believe that which their instruments tell them, they seem to be able to maintain orientation.

As fluid forms spherical globules in the weightless state, and as there is no restraint due to gravity, drinking from the usual type of container has been found to be impossible (Figure 4). However, the use of a simple squeeze bottle has been an adequate answer. Space sickness, a condition supposedly akin to air sickness, was predicted, but again, has not occurred in those who have had years of flight experience, or those who have not been exposed to high accelerations, as they entered or came out of the parabolic flight path utilized to simulate weightlessness.

The problems of acceleration during the period of launch and those of deceleration as the inward bound vehicle strikes the dense atmosphere are serious ones. However, through proper positioning on a couch-like structure and accepting the forces through the body's transverse dimensions, along with slow-down through the retrofiring of rockets, multiple parachutes, cushioning, etc., tolerable ranges can be achieved. Temperature problems during reentry resulting from atmospheric friction are also serious but solvable.

Radiation of various types and from various sources probably poses one of the most serious barriers to space travel. The newly discovered Van Allen belts of radiation, cosmic heavy primary radiation, cosmic secondaries, particles from solar storms, radiation from high speed penetration of the sparsely distributed hydrogen atoms of space, described by Newell, along with those which some day may come from nuclear reactor propulsive units, all present serious individual, as well as accumulative problems which vary from situation to situation. These problems, in turn, are reflected in other problems, such as tolerance levels, shielding methods, etc., etc. One solution often begets another problem; sometimes even of more serious magnitude than its predecessor.

In the earlier days of aviation medicine, the pilots and the physicians formed teams. As a result of one such team effort, the problem of blind flight was solved (Ocker, Crane and Myers). Later the teams included biophysicists, physiologists, and now must include, among many other new disciplines, astrophysicists and astronomers.

Finally, one must point to a few of the more or less absolute limitations of space flight. According to the theory of relativity, the speed of light is an absolute limitation, as matter cannot exist at that velocity. However, it is questionable if this velocity can ever even be approached, due to many physical factors, such as radiation produced by the vehicle itself during extreme speeds. Another limitation is the distance which can be traversed in an acceptable period of time, as it will limit the distances man may wish to go. He will certainly want to return to a social structure which he understands, and to which he can be integrated. The distances of possible planetary systems beyond the solar system are possibly great limitations, as the void beyond the planet Pluto, the outermost planet of our system, is a very great one, measurable, only in light years, and thus would be too far.

Conclusion

Just where is all this leading? Only time will tell; but man is now rapidly gaining the means to break away from his mundane existence and undertake his greatest adventure. The aerospace physician and his scientific associates will be among those who will spearhead such a change within the very near future. The major portion of this progress, so far as the arts of medicine are concerned, have occurred in the past four decades.

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U.S.A.F. Aerospace Medical Center

HELP LAUNCH HOPE



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A Concentration Difficulty in University Students

... APROSEXIA

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Aprosexia, or difficulty in concentration, is a common complaint of students availing themselves of the psychiatric-diagnostic facilities of the Student Health Center at the University of North Carolina. It is similarly prevalent in students seen for psychotherapy at the Psychiatric Center of the Medical School. While not as spectacular as some psychoneurotic conditions or character disorders, it is a serious matter to the student. What might otherwise be a barely clinical level of anxiety or depression can, by impairing the ability to study, compromise the student's situation at the University and his future. The student's parents are as concerned as he is. The inability to utilize maximally educational facilities constitutes a loss to the University and to society. Data for this presentation is derived from diagnostic experience in the Student Health Center and from individual and group psychotherapy with University students. Psychopathologic conditions antecedent to aprosexia, illustrative cases, and treatment possibilities will be considered.

Underlying Psychopathologic Conditions

Studying at the college level requires considerable mental and emotional efficiency. It is also by definition the work of a student. Any neurotic or psychotic disorder which interferes with efficiency may lead to aprosexia as may any character trait involving a conscious or unconscious disinclination to work.

Anxiety is a danger signal perceived by the conscious mind. It derives from unconscious emotions and conflicts that are not being successfully dealt with and can be defined as fear without obvious cause. An anxious student is irritable, distractable, worries excessively. Prolonged and painstaking study is excessively difficult under these conditions. Depression with apathy, discouragemen*, slowing down and guilty self-accusations, constitutes a mental and emotional condition similarly nonconducive to successful concentration. Students often report having mild degrees of anxiety or depression that do not preclude dating, holding jobs, or extracurricular activities but do interfere with study. Other psychoneurotic conditions, less prevalent in the student age group, contribute to aprosexia. A few students report that obsessions—the persistence of unwelcome ideas, and compulsions—the repetitive need to perform certain acts, interfere with study.

Schizophrenia, considered a psychotic condition, sometimes occurs in mild or partly com-

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pensated forms. Mental processes are characterized by more interest in one's own thought associations and inner experiences than in objective reality. There is inability to properly abstract a principle from a mass of data. Some schizophrenic students are more comfortable with books than they are with people. Their disturbance is minimal while studying and they may devote unusual amounts of time to their work. Students with manic or near manic conditions have boundless confidence and energy but often start new activities rather than complete those with which they are involved. Occasionally, a student with this disturbance successfully channels his energies and does extremely well.

Study as mentioned previously *is work*. It is often interesting, even fascinating, and the student can reasonably expect future rewards for his efforts. But still it is hard work and required work. A student with the character trait of wanting to be taken care of, or of resisting anything required of him, will have trouble with this aspect of study. The trait involved is often obvious to everyone else but to the individual who has it. A student may honestly state that he wants to study but cannot make himself do so. An occasional student is perfectly aware of his disinclination to apply himself but not of the causes for this facet of his personality. The character problems which interfere with study often have other manifestations such as excessive drinking, general resistance to authority and "wild behavior." Frequently, the inability to study is the only appreciable sign of trouble.

Some students cannot study because, without knowing it, they are afraid to succeed. Achievement is unconsciously perceived as an aggressive act that may cause loss of love or hostile reactions. This may come about if the normal competitive feelings of childhood are complicated by fears of rejection and retaliation.

Most often aprosexia represents in part the effect of anxiety or depression and in part an unconscious character trait, both of these being attempts to deal with an underlying problem.

Clinical Illustrations

A. ANXIETY: *Stan, a sophomore, was the only child of an authoritarian but affectionate mother. His father, quite successful at work, was too busy to spend much time with his family. Stan's parents quarrelled often and violently, and his mother turned to him for solace. He both enjoyed and felt guilty about this situation. Before adolescence, he realistically felt himself to be more intelligent and better off financially than his friends but got along well. At sixteen he withdrew socially and over-studied, a pattern he continued through the first year of college. He then discerned there was something wrong, pushed himself successfully into dating, but became progressively anxious and unable to concentrate. When first seen at the clinic, Stan was pleasant but so visibly tense and anxious that it was uncomfortable to watch him.*

B. BORDERLINE SCHIZOPHRENIA: *John, a senior, was the youngest son of an intermittently hospitalized schizophrenic mother who had little to do with him even when she was at home. His father, very close to him, advised and helped with everything. John had superficial contact with some people but did not get involved with them. Contact with others would lead to wild and pleasurable fantasies which sometimes he could not stop. When studying he would become lost in minor details and extraneous material. At the diagnostic interview, he was aloof, talked about himself as one would describe a distant acquaintance, and occasionally lost his train of thought.*

C. CHARACTER DISORDER: *Dick, a senior, was the second child of three of a mother who had been "physically weak," impossible to please, and generally ill tempered since his birth. His father gave everything and demanded nothing. Dick always had a "way with people" and did well socially. His intelligence enabled him to succeed academically in high school without applying himself. In college he did not study, did not do at all well, changed majors several times, and consistently stood near the bottom of his class. When seen*

at the clinic he was comfortable, engaging, and complained bitterly of not being able to "make himself study."

Treatment Possibilities

Going away to school is a rewarding but difficult experience. The university offers almost limitless academic, extracurricular, and social activities. Students, however, find themselves in a new situation without their accustomed sources of support from families and other significant individuals. Many do not realize what the demands, possibilities, and challenges of higher education are until they arrive. Many, when they do arrive, are not sure why they came. Many are so used to doing well without effort that they never learned to work; many are so used to being made to work on a day-to-day basis by parents and teachers that they are unable to keep up by themselves.

Fortunately, most of these problems "work themselves out;" students (and other people) can adapt to new situations. There are many sources of support and, when needed and appropriate, of advice. Ministers, physicians, dormitory and faculty advisors all function in this capacity. There is no formula for this type of help, but successful counsellors are more often those who see the student's difficulty as one of meeting new situations rather than "he's too lazy to work" or "she'd rather date every night than study." Counselling has wider applicability than to those who absolutely could not get along without it; it can also help students derive more from their university experiences.

Psychiatric referral is indicated when the problem does not "work out" or when the counsellor perceives or suspects considerable depths of disturbance beneath the problem. Often the psychiatrist refers the student back to the counsellor; sometimes he acts as a counsellor himself. In some instances, he will recommend psychoanalytically-oriented psychotherapy or psychoanalysis. These treatments have insight and personality change as goals; the individual is given a chance to change by understanding and by appreciating the presence of unconscious reasons for his difficulty. The techniques and prognosis of psychotherapy depend not only on the basic psychopathology but on other personality traits as well and on external factors. No two courses of psychotherapy are alike; the presence of a symptom in common, such as aprosexia, does not alter this. Group therapy with students having the difficulty of aprosexia has been carried out. The program was initiated to meet demands for treatment and to learn more about the complaint. Therapy was directed toward facilitating the expression and understanding of unconscious feelings, thus permitting better adaptaproved during the course of therapy and the over-all scholastic average of the group rose.

Summary

Difficulty in studying is a widespread complaint among university students. A treatment program based on appreciation of the student's problem and his potential to adapt, on counselling when needed or likely to be of help, and on psychiatric consultation and treatment, when indicated, will help in the great majority of instances. The full utilization of the advantages offered by the university is not only of importance to the student but is a matter of vital concern to society.

Department of Psychiatry

Evaluation and Rehabilitation of Patients with Hearing Loss

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An outline of the methods and procedures employed in the evaluation and rehabilitation of military patients with a hearing loss is presented. Particular attention is given to the diagnostic team approach, the tools used, and the possible methods of rehabilitation. These points are further illustrated by presenting actual cases representative of several types of hearing loss. Included are the significant audiometric studies, the diagnosis, and the proposed treatment.

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The rapid and successful progress in today's medicine has brought to fore the responsibility of rehabilitation, a medical aspect which, before World War II, had been rather poorly represented. The responsibility for directing the rehabilitation of patients with a hearing loss lies with the medical profession. The United States Army Medical Corps, aware of this responsibility, is conducting an intensive hearing program to evaluate and rehabilitate patients with hearing impairments. About twenty-five hundred patients are seen each year at the Army Audiology and Speech Center, Walter Reed General Hospital. The procedures outlined in this article are based on the experience gained from rehabilitating over thirteen thousand patients. As a corollary of this program, intensive research in the field of audiology is being carried on to improve the procedures and techniques currently employed.

To achieve the goals of rehabilitation, the work of the various sections, Medical, Hearing, Speech, Psychology, Visual Hearing, Bioacoustics, and Electroacoustics, is coordinated to give the patient the benefit of the various disciplines involved. Helping the patient to learn to live with his handicap and teaching him to function in social and occupational situations is of primary concern. Those patients fitted with a hearing aid, and those for whom a hearing aid is not indicated but who experience some difficulty in communication, are enrolled in a program of hearing rehabilitation.

Diagnostic Procedure

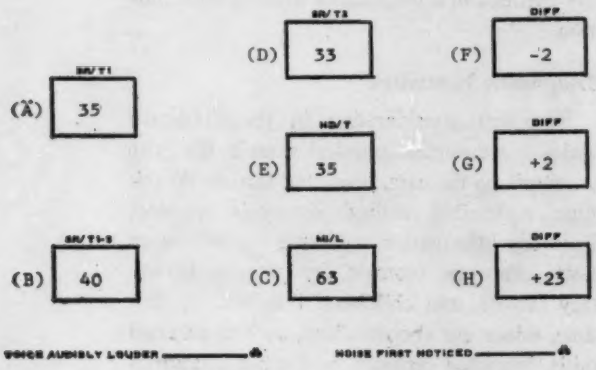
The first consideration in the diagnostic series is a complete physical examination with emphasis on the ears, nose, and throat. At this time, a detailed medical history is obtained, including information regarding ear infections, noise exposure, ototoxic drug intake, hereditary factors, and childhood illnesses. At this time, minor ear abnormalities, such as external otitis, impacted cerumen, and other conditions are also treated.

Following the ear, nose, and throat examina-



FIGURE 1 Two-room speech audiometry suite showing audiologist seated behind viewing window. Both control room and patient's room are sound treated.

FIGURE 2 Doerfler-Stewart Test — Normal or negative Doerfler-Stewart test showing (A) initial SRT, (B) SRT plus 5 db, (C) the db level at which the "saw-tooth" noise interferes with speech, (D) the second SRT after the noise has been eliminated, (E) the db level at which the noise is heard, (F) the difference between the first and second SRT's, (G) the difference between the noise detection and the better SRT, and (H) the difference between the SRT and the noise interference level. The limits for (F), (G), and (H) are +/— 3 db, +/— 3 db, + 25 db respectively.



tion, each patient is given tests to evaluate his hearing. An initial audiometric evaluation includes pure tone audiometry, air and bone conduction, and speech audiometry. Although pure tone audiometry is generally thought of and requested before speech audiometry, it is standard procedure in the clinical routine to accomplish speech reception threshold (SRT) testing first. There are several good reasons for this. For example, (1) the patient is more familiar with the speech signal than the pure tone signal, (2) speech testing is more general in nature and is less fatiguing to the patient, and (3) speech reception thresholds offer a quicker overall index to the degree and often the pattern of the patient's hearing loss. Speech audiometry at the Army Audiology and Speech Center routinely consists of obtaining a binaural and monaural speech reception threshold and speech discrimination test (PB) as well as a Doerfler-Stewart Test (DS). Speech audiometry is administered in a special sound-treated room furnished with ear phones, a microphone, and a loud speaker (Figure 1). The audiologist relays signals to the patient from a control panel in an adjoining room with a window for viewing the patient. Speech reception thresholds are obtained by the presentation of spondaic words (such as airplane or baseball) and by determining the level at which the patient is just able to repeat accurately about fifty percent of the words.

Since it is important to judge the reliability of the patient's responses on subjective tests, the Doerfler-Stewart Test is added to the series of initial speech hearing tests. This test is based on a speech-to-noise ratio. It is often possible to determine whether or not a patient is giving true speech thresholds by measuring the level of intensity at which a calibrated "saw-tooth" noise interferes with his ability to understand faint speech. The noise interference level in a bonafide organic loss should fall within certain specified limits (Figure 2). Relationships between the several aspects of the test are carefully studied and if inconsistencies are apparent, further tests may be indicated. The audiologist, however, must be

LIST 5A	CORRECT	LIST 6A	CORRECT
1 thud	26 wink	1 scan	26 clothes
2 curse	27 high	2 wasp	27 crib
3 nose	28 yawn	3 pun	28 deep
4 sly	29 good	4 tongue	29 fall
5 inch	30 pipe	5 pus	30 fowl
6 owls	31 cheat	6 badge	31 chart
7 greek	32 bronze	7 nigh	32 fee
8 trade	33 shove	8 flop	33 shank
9 love	34 beck	9 match	34 rough
10 puff	35 wrath	10 eyes	35 ray
11 kid	36 hill	11 thigh	36 best
12 roe	37 rear	12 leg	37 beg
13 thick	38 rode	13 flick	38 gap
14 bake	39 bathe	14 kept	39 rooms
15 solve	40 choose	15 jag	40 eat
16 odds	41 lend	16 cob	41 sup
17 scare	42 tug	17 hitch	42 wife
18 true	43 feed	18 dad	43 forge
19 watch	44 punt	19 reap	44 mash
20 shine	45 add	20 slouch	45 ode
21 flap	46 pass	21 grope	46 raise
22 grudge	47 rind	22 cloth	47 prime
23 black	48 mast	23 as	48 plug
24 drive	49 vase	24 hall	49 thus
25 zone	50 sick	25 wait	50 gage

FIGURE 3 shows a representative sample of the word lists used for testing discrimination. (These words were developed by the Harvard Psychoacoustics Laboratory.)

aware of the clinical entities which may produce false-positive results on this test.

Another speech hearing test in the initial battery is the PB test to determine discrimination for speech. It is important to know not only how faintly the patient can hear speech, but also how accurately he is able to understand speech when it is well above his threshold. For the PB test, the voice signal is increased to a level of at least twenty-five db above the patient's SRT. He is asked to repeat a phonetically-balanced list of fifty test words presented with a carrier phrase. For example, "You will say *gun;* you will say *have*" etc. (Figure 3). The audiologist allows two percent for each correct response. A discrimination score of ninety percent or better indicates a very good ability to discriminate between speech sounds. A score of seventy percent indicates that the patient has some difficulty in understanding speech.

The next test procedure is the administration of pure tone audiometry. An air conduction audiogram for each ear is obtained by testing the patient's hearing for the following eight pure tone frequencies: 250, 500, 1000, 2000, 3000, 4000, 6000, and 8000 cps. A combination ascending and descending tone presentation is used and the patient is instructed to raise his finger each time a faint signal is heard. It is felt that raising the finger to indicate that a tone has been heard is a much better method for diagnostic testing than requiring the patient to press a button. The intensity at which the patient admits to hearing approximately fifty percent of the tones presented is taken as the pure tone threshold for that frequency. When air conduction thresholds for all frequencies have been established for both ears, the test is repeated for bone conduction. The most sensitive spot on the mastoid must be located and the bone conduction oscillator applied. The frequencies of 250, 500, 1000, 2000, and 4000 cps are tested with the same technique used for obtaining air conduction thresholds. When establish-

ing bone conduction thresholds, however, it is standard procedure to mask the ear not under test. This is not done routinely during the air conduction portion of the audiogram. It is important that the bone conduction test be performed as accurately as possible if a proper diagnosis is to be made. In general, a close correlation between pure tone and speech test results is expected, and each test furnishes information that will be of diagnostic value in determining the rehabilitation needs of the patient.

Because patients who have had a hearing loss for a long period of time may show some deterioration of speech, an evaluation of articulation and voice is an important phase of the diagnostic procedure. When hearing acuity becomes poor, speech is sometimes altered. Speech sounds may begin to deteriorate and volume may become too loud or too soft. The Army Audiology and Speech Center has a special training course in "speech conservation" to help the patient understand more about his speech so he can prevent these changes.

In many hearing problems, the medical, the hearing, and the speech examinations establish the pathology present but do not always explain why the patient functions poorly. It is important, therefore, to administer a group of psychological tests to complete the clinical picture. Since one out of every three patients admitted demonstrates an exaggerated hearing loss on initial audiologic testing, the clinical psychologist has an important function on the diagnostic team. A knowledge of the abilities and motivations of the patient is essential to a proper understanding of his complaint. By reviewing the psychological goals of the patient, the clinical psychologist helps the otologist and other members of the clinical team to better understand the behavior of the patient. He may also suggest methods of handling the patient in order to facilitate the diagnostic process.

Occasionally, when the group-administered tests and the psychological interviews do not permit the psychologist to fully understand a particular patient, additional individual psychological tests may be given.

Rorschach Ink Blot tests or the Thematic Apperception Test may be useful in uncovering emotional difficulty. At other times, because of limited education, additional individual intelligence tests may be necessary. Each patient is interviewed by the clinical psychologist who at this time reviews the test findings with the patient and evaluates his personality and emotional adjustment.

Rehabilitation Procedure

After the patient has been examined medically, audiologically, psychologically, and has been given a diagnostic speech examination, the results are brought together to determine the diagnosis and to prescribe proper treatment. This is done in the diagnostic conference. A representative from each of the specialities attends the conference to present the results of the tests performed by his section. After all the information is presented, the otologist summarizes the findings and makes the diagnosis. Treatment or disposition of the patient is decided on the basis of the diagnosis and all other available information.

If a patient is to be evaluated and fitted with a hearing aid and given the full rehabilitation program, a new series of appointments is made. He is counseled regarding the length of his stay in the hospital and the course of his rehabilitation. A decision is also made concerning the ear to be fitted with a hearing aid. If possible, the poorer ear is generally selected for the hearing aid. In making this selection, consideration is given to the degree of hearing loss, the discrimination scores, and the physical structures of the ear. At the present time, physical changes in the ear due to surgery do not interfere with the fitting of a hearing aid. Impression techniques developed at the Army Audiology and Speech Center have greatly enhanced the making of an adequate ear insert.

Since 1954, the Army Audiology and Speech Center has produced a soft hollow insert which was developed by the U. S. Army to replace the hard acrylic insert previously

used. This soft type insert has proved to be more comfortable and to provide an excellent acoustic seal. It also serves as a safeguard against trauma, which in itself is an important consideration for the Armed Forces where personnel are engaged in strenuous physical activities.

When the insert has been processed and is ready for use, the patient is scheduled for an evaluation of hearing aids. To determine the most effective aid, the audiologist weighs at least three considerations with each aid: (1) sensitivity, (2) discrimination, and (3) tolerance. For sensitivity, the audiologist helps the patient adjust the volume of the aid to a comfortable loudness for normal conversational level. He then checks to see how much the aid improves his speech reception threshold. This procedure is repeated with the aid set at full volume. The results of these tests indicate the range of gain provided by the aid. Next, the audiologist tests how well the aid maintains or improves the patient's ability to discriminate phonetically balanced lists of words in quiet as well as in noise. This procedure is similar to that followed for testing unaided discrimination in the initial audiometric work-up. Finally, tolerance is tested. The audiologist sends a voice signal through at increasing intensity to determine how well the patient can tolerate loud sounds with an aid. On the basis of the overall performance, one aid is selected for the patient and he is oriented in its use, operation, and care. He is told that a hearing aid is a miniature amplifying device which collects sounds of one intensity, makes them louder, and delivers them to the ear of the listener. Essentially, the hearing aid consists of four parts: (1) a microphone to collect sound, (2) an amplifier to increase the intensity, (3) a power supply, and (4) a receiver or earphone (Figure 4).

The patient is further impressed with the fact that the hearing aid does not assign meaning to sound—this is a function of the cortex. The sole purpose of the hearing aid is to deliver sound of increased intensity to the ear.

It should be understood by those concerned

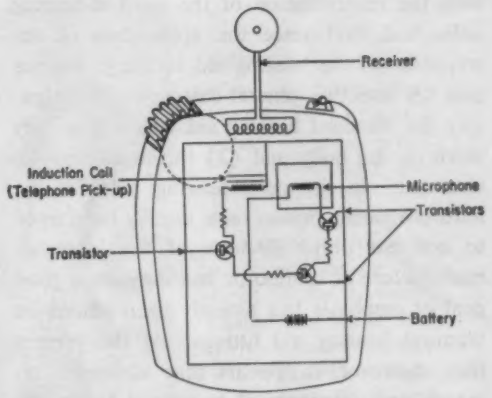
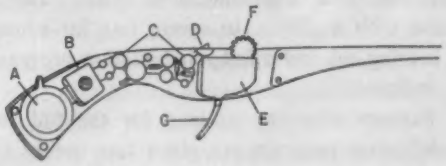


FIGURE 4A Standard Hearing Aid—An artist's schematic drawing of a standard model transistor hearing aid showing microphone, receiver, power supply and amplifier.

FIGURE 4B Headborn Hearing Aid—Cut-away of hearing temple diagramatically showing:

A—Battery
B—Microphone
C—Transistors, wiring, resistors, etc.
D—"On-off" switch
E—Reproducer (Receiver)
F—Volume control
G—Tube leading to ear insert



with the rehabilitation of the hard-of-hearing individual, that since the application of the transistor to the hearing aid industry, hearing aids fall into two general categories of design: (1) the standard hearing aid which is usually worn on the body and (2) the headborne instrument. In the past, hearing aids for the hard-of-hearing person have usually been fitted to one ear only. Because of the increased manufacture of headborne hearing aids, a good deal of emphasis has recently been placed on binaural hearing aid fittings. At the present time, however, it appears that additional research and development is needed before binaural hearing aid fittings are considered superior to monaural hearing aid fittings in all instances.

In general, patients with a diagnosis of organic hearing impairment may be divided into three groups. First, those with a very mild hearing loss for whom no rehabilitation is indicated at the present time. These patients are returned to duty and preventive measures instituted. Second, those with a mild to moderate loss for whom a hearing aid is not indicated but who experience some difficulty in communication. These may be given training to improve their communicative skills. Third, those with moderate to severe loss for whom a hearing aid and a full rehabilitation program is indicated.

Patients who are retained for the full rehabilitation program are given four weeks of intensive instruction, including auditory training, speech reading, and speech conservation. Emphasis is placed on helping the patient to supplement the help he gets from his hearing aid by teaching him to use his eyes for visual clues.

Patients who fall into the second category are given an abbreviated two-week rehabilitation course in an effort to acquaint them with their hearing problem and to apprise them of the various methods that may alleviate minor difficulties with communication.

Occasionally, the diagnostic conference will uncover a patient with highly inconsistent audiograms. When this occurs, it becomes necessary to schedule the patient for additional hearing tests designed to uncover nonorganic or functional hearing loss. One of the most powerful tests for verifying a unilateral loss is the pure tone Stenger Test. This test is based on the assumption that when a soft tone is presented simultaneously with a loud tone of the same frequency in the opposite ear, the louder tone will mask the softer one. To make certain that this tone is readily heard by the patient, the intensity is increased 10 db in the better ear for the Stenger Test. The intensity of the test tone in the purportedly poorer ear is decreased 10 db below the admitted threshold. The Stenger Test requires that the two tones be presented simultaneously and the patient is asked to indicate when a tone is heard. If the patient does not admit to hearing the tone, it must be assumed that the loud tone in the supposedly poorer ear is masking out the supra-threshold tone in the better ear.

Another test frequently used, if a nonorganic loss is suspected, is galvanic audiometry. This is an objective test technique in which an attempt is made to determine organic thresholds without the full cooperation of the patient. This method uses a measurement of changes in skin resistance that occur under certain conditions when a tone is heard. The necessary equipment includes a psycho-galvanometer with two sets of electrodes, a means of measuring changes in skin resistance, and a pure tone audiometer. The two electrodes are taped to the fingers of one hand to pick up changes in skin resistance, and another set of electrodes is fastened to the opposite arm for the purpose of presenting an electric shock.

The patient receives a series of tones followed by shocks, first at levels above the admitted thresholds. Once shifts in skin resistance in anticipation of shock are established, threshold levels may be determined. This test is by no means infallible. It may or may not be successful in obtaining galvanic responses to the tones, but one of its greatest values lies in its power as a motivating force to help obtain more accurate results in the follow-up subjective test which is immediately



FIGURE 5 Audiologist wires resistance electrodes to patient's fingers in preparation for administering galvanic audiometry. In the background is the pure tone audiometer which will deliver the tones to the patient's headphones and the galvanometer which will measure changes in the patient's skin resistance.

administered. The psychological impact of galvanic audiometry appears to be such that the patient may feel, on either a conscious or unconscious level, that the degree of his loss has already been established and he frequently becomes much more cooperative and responds more consistently and more accurately (Figure 5).

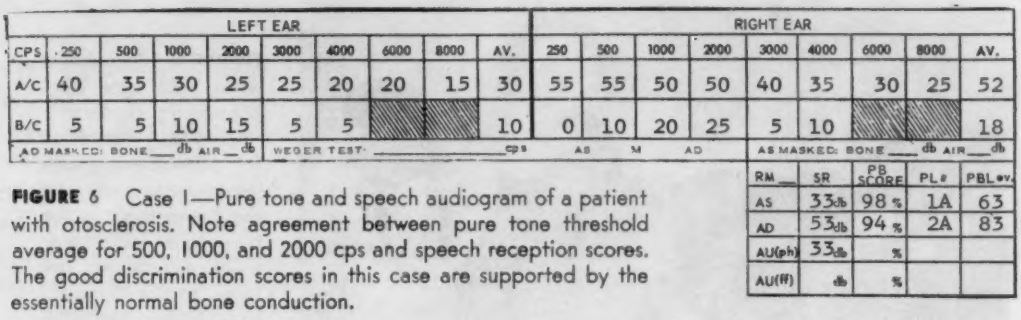
In some rare instances, the group of tests given the patient do not yield conclusive results. When this is the case, the diagnostic team usually recommends that additional information be gleaned from other services in the hospital, such as Neuropsychiatry and Radiology.

Once the necessary group of tests have been performed and all the required information has been gathered, full attention is given to the management of the hard-of-hearing patient, a consideration which is of the utmost importance.

Case Presentations

The following case presentations will serve to better illustrate the various kinds of hearing losses encountered and the subsequent management techniques employed to rehabilitate the patients.

CASE 1—*This was a 32-year-old male who first noticed a hearing loss in 1944. In 1951, the right ear was fenestrated in civilian life. In 1955, the patient noticed that he was having trouble with his hearing and was admitted to Walter Reed General Hospital for evaluation. Family history indicated that his mother had a hearing loss and had worn a hearing aid since she was 25 years of age. The medical history was otherwise negative. Otological examination revealed the left ear to have a normal external acoustic canal and a normal tympanic membrane. The right ear showed a clean mastoid bowl with a positive fistula test. X-ray of the right mastoid gave evidence of a radiolucent area in the periantral region as a result of previous surgery. No bone destruction lesion was noted on either side. The rest of the physical examination was essentially negative. Figure 6 shows the average pure tone loss of 52 db in the right ear and 30 db in the left ear. The bone conduction was within normal limits in both ears, however, the otosclerotic notch may be seen in the bone line at 1000 and 2000 cycles in both ears. The speech scores are consistent with the pure tone thresholds—53 db SRT in the right ear; 33 db in the left ear. Discrimination scores are good. The Doerfler-Stewart Test was negative and the results*

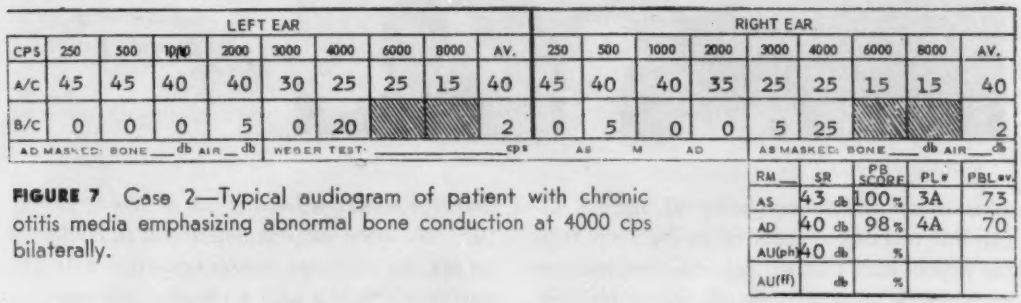


	LEFT EAR									RIGHT EAR								
CPS	250	500	1000	2000	3000	4000	6000	8000	AV.	250	500	1000	2000	3000	4000	6000	8000	AV.
A/C	40	35	30	25	25	20	20	15	30	55	55	50	50	40	35	30	25	52
B/C	5	5	10	15	5	5			10	0	10	20	25	5	10			18

AD MASKED: BONE ___ db AIR ___ db WEBER TEST: _____ cps AS M AD AS MASKED: BONE ___ db AIR ___ db

RM ___	SR	PB SCORE	PL#	PBL ev.
AS	33 db	98 %	1A	63
AD	53 db	94 %	2A	83
AU(ph)	33 db	%		
AU(ff)	db	%		

FIGURE 6 Case 1—Pure tone and speech audiogram of a patient with otosclerosis. Note agreement between pure tone threshold average for 500, 1000, and 2000 cps and speech reception scores. The good discrimination scores in this case are supported by the essentially normal bone conduction.

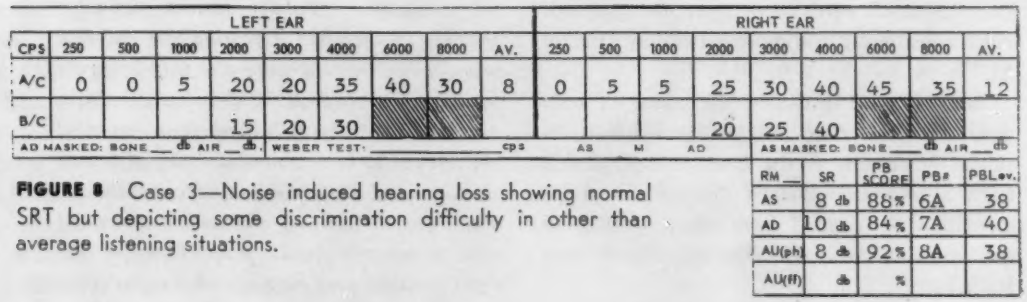


	LEFT EAR									RIGHT EAR								
CPS	250	500	1000	2000	3000	4000	6000	8000	AV.	250	500	1000	2000	3000	4000	6000	8000	AV.
A/C	45	45	40	40	30	25	25	15	40	45	40	40	35	25	25	15	15	40
B/C	0	0	0	5	0	20			2	0	5	0	0	5	25			2

AD MASKED: BONE ___ db AIR ___ db WEBER TEST: _____ cps AS M AD AS MASKED: BONE ___ db AIR ___ db

RM ___	SR	PB SCORE	PL#	PBL ev.
AS	43 db	100 %	3A	73
AD	40 db	98 %	4A	70
AU(ph)	40 db	%		
AU(ff)	db	%		

FIGURE 7 Case 2—Typical audiogram of patient with chronic otitis media emphasizing abnormal bone conduction at 4000 cps bilaterally.

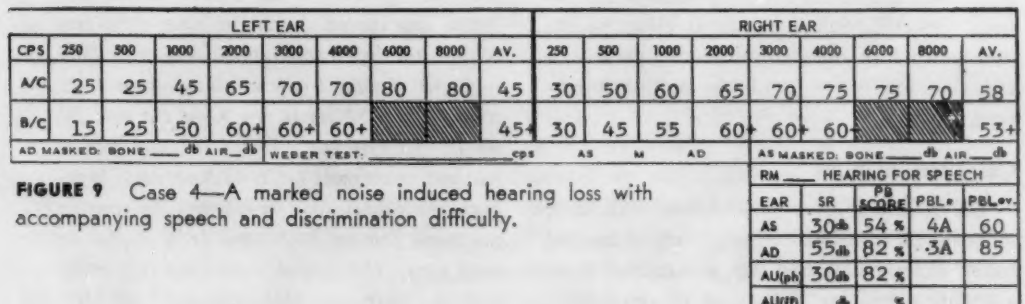


	LEFT EAR									RIGHT EAR								
CPS	250	500	1000	2000	3000	4000	6000	8000	AV.	250	500	1000	2000	3000	4000	6000	8000	AV.
A/C	0	0	5	20	20	35	40	30	8	0	5	5	25	30	40	45	35	12
B/C				15	20	30							20	25	40			

AD MASKED: BONE ___ db AIR ___ db WEBER TEST: _____ cps AS M AD AS MASKED: BONE ___ db AIR ___ db

RM ___	SR	PB SCORE	PB#	PBL ev.
AS	8 db	86 %	6A	38
AD	10 db	84 %	7A	40
AU(ph)	8 db	92 %	8A	38
AU(ff)	db	%		

FIGURE 8 Case 3—Noise induced hearing loss showing normal SRT but depicting some discrimination difficulty in other than average listening situations.



	LEFT EAR									RIGHT EAR								
CPS	250	500	1000	2000	3000	4000	6000	8000	AV.	250	500	1000	2000	3000	4000	6000	8000	AV.
A/C	25	25	45	65	70	70	80	80	45	30	50	60	65	70	75	75	70	58
B/C	15	25	50	60+	60+	60+			45+	30	45	55	60+	60+	60+			53+

AD MASKED: BONE ___ db AIR ___ db WEBER TEST: _____ cps AS M AD AS MASKED: BONE ___ db AIR ___ db

RM ___ HEARING FOR SPEECH

EAR	SR	PB SCORE	PBL#	PBL ev.
AS	30 db	54 %	4A	60
AD	55 db	82 %	3A	85
AU(ph)	30 db	82 %		
AU(ff)	db	%		

FIGURE 9 Case 4—A marked noise induced hearing loss with accompanying speech and discrimination difficulty.

were very reliable. The speech findings were negative and the psychological evaluation revealed that this patient functioned at an average intelligence level. No difficulty with his rehabilitation was anticipated.

DIAGNOSIS: Organic hypacusia, conductive, bilateral, moderate due to otosclerosis.

TREATMENT: Hearing aid evaluation and full rehabilitation. Upon completion of this program, the patient was evaluated for possible surgical procedures (A stapedolysis).

The right ear was fitted with a moderate gain hearing aid even though the medical history revealed this ear to have undergone fenestration surgery. Because of an ear mold impression technique developed at the Army Audiology and Speech Center, little difficulty was encountered in obtaining a tight fitting ear insert.

CASE 2—*This was a 22-year-old male who was admitted to Walter Reed General Hospital with a three-year history of purulent discharge from both ears and a hearing loss. Physical examination was negative except for the ears. The right tympanic membrane had two healed central perforations and a small calcareous deposit. The left tympanic membrane showed a small healed central perforation. Both ears were dry on admission.*

The patient's audiograms showed both ears to be alike. He had a pure tone average of 40 db in both ears for air conduction. His bone conduction was within normal limits except at 4000 cps which showed a slight shift to 25 db on the right and 20 db on the left. (This is a common occurrence in audiograms of patients with chronic otitis media which may be a mechanical notch similar to the one found in otosclerosis, but in other frequencies.) The SRT in the right ear was 40 db and in the left ear 43 db with good PB scores. The speech and psychological evaluations were within normal limits.

DIAGNOSIS: Organic hypacusia, combined, predominantly conductive, bilateral, moderate, due to chronic otitis media. The treatment was hearing aid evaluation and full rehabilitation.

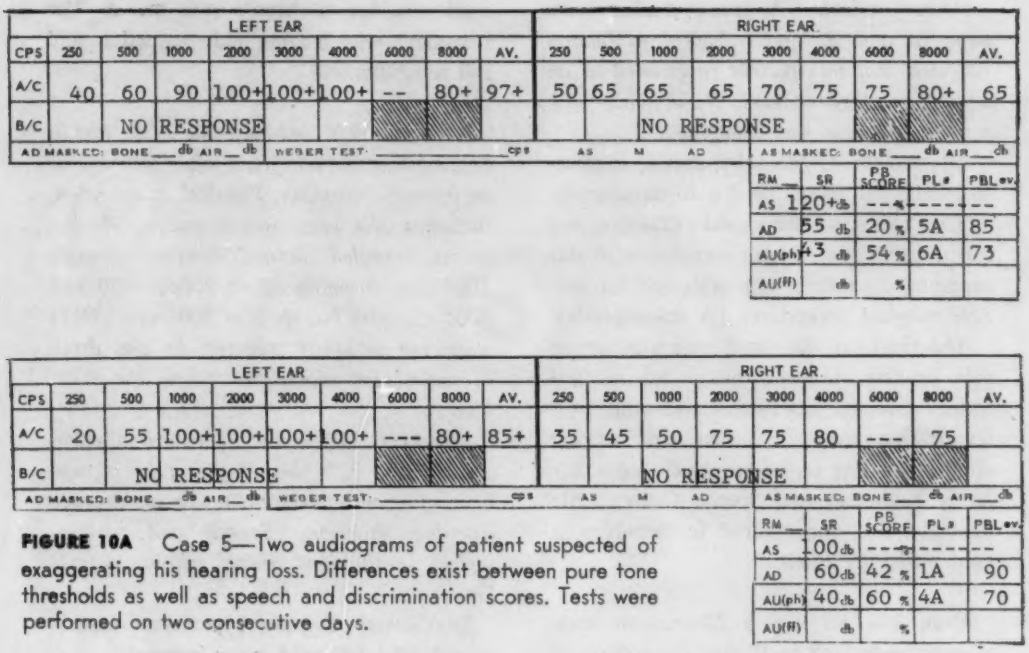
CASE 3—*This 41-year-old male had a hearing loss for ten years while working as an infantry instructor. Physical examination, including the ears, was negative. Audiograms revealed normal hearing through 1000 cps dropping off at 2000, 4000 and 6000 cps with less drop at 8000 cps. SRTs were not seriously affected by the drop. Monaural PB scores fell below the 90% level.*

However, the patient's binaural discrimination was 92% showing that he is capable of good understanding in an average listening situation. Speech and psychological evaluations were within normal limits.

DIAGNOSIS: Organic hypacusia, sensorineural, bilateral, mild, noise induced.

TREATMENT: Consisted of counselling because a trial of hearing aids indicated no measurable improvement. It is often found that patients with a mild hearing loss, as illustrated in Case 3, get no justifiable benefit from a hearing aid. Patients in this category are retained for a series of counselling sessions in an effort to improve his listening habits.

CASE 4—*This 35-year-old male in the Artillery had had tinnitus in both ears and bilateral hearing loss for two years. Physical examination, including ears, nose, and throat was essentially negative. The audiogram showed a marked high frequency loss, more severe in the right ear than the left. His average loss for pure tone was 45 db in the left ear and 58 db in the right ear; speech scores showed 30 db loss for the left ear and 55 db for the right ear. Discrimination was better in the ear showing the more severe loss for speech—82% in the right ear as compared to only 54% in the left ear. Discrimination, binaurally, was 82%. Speech evaluation showed a slight*



LEFT EAR										RIGHT EAR								
CPS	250	500	1000	2000	3000	4000	6000	8000	AV.	250	500	1000	2000	3000	4000	6000	8000	AV.
A/C	40	60	90	100+	100+	100+	--	80+	97+	50	65	65	65	70	75	75	80+	65
B/C		NO RESPONSE										NO RESPONSE						

AD MASKED: BONE ___ db AIR ___ db WEBER TEST: _____ CPS AS M AD AS MASKED: BONE ___ db AIR ___ db

RM	SR	PB SCORE	PL#	PBL ex.
AS	120+ db	--- %	---	---
AD	55 db	20 %	5A	85
AU(ph)	43 db	54 %	6A	73
AU(ff)	db	%		

LEFT EAR										RIGHT EAR								
CPS	250	500	1000	2000	3000	4000	6000	8000	AV.	250	500	1000	2000	3000	4000	6000	8000	AV.
A/C	20	55	100+	100+	100+	100+	---	80+	85+	35	45	50	75	75	80	---	75	
B/C		NO RESPONSE										NO RESPONSE						

AD MASKED: BONE ___ db AIR ___ db WEBER TEST: _____ CPS AS M AD AS MASKED: BONE ___ db AIR ___ db

RM	SR	PB SCORE	PL#	PBL ex.
AS	100 db	--- %	---	---
AD	60 db	42 %	1A	90
AU(ph)	40 db	60 %	4A	70
AU(ff)	db	%		

FIGURE 10A Case 5—Two audiograms of patient suspected of exaggerating his hearing loss. Differences exist between pure tone thresholds as well as speech and discrimination scores. Tests were performed on two consecutive days.

volume problem and some difficulty with the "S" and "Z" sounds.

DIAGNOSIS: Organic hypacusia, bilateral, moderate, sensori-neural, noise induced.

TREATMENT: Hearing aid evaluation and full rehabilitation.

CASE 5—*A 37-year-old male patient with a complete negative medical history including ears, nose, and throat. The tests on this patient were very inconsistent. He showed an almost total loss of hearing for both speech and pure tone in his left ear and a severe loss in his right ear. The binaural speech score was much better than the score for either ear separately and nothing in the pure tone audiogram could account for this. The Doerfler-Stewart Test was positive. During the testing, it was noted that he answered questions and followed instructions easily even though he was not watching the speaker. The test results obtained were very unsatisfactory. The psychological test revealed that while he showed average intellectual ability on our tests, he demonstrated a great deal of emotional pathology.*

In 1943, during the war, this patient was caught in an artillery bombardment while taking shelter in the basement of a farmhouse. The house above him was destroyed and he was convinced then that there was something wrong with his hearing. It was felt that this was a case of hysteric reaction.

The psychologist worked with him in an attempt to convince him that his hearing was normal. The following audiometric inconsistencies were noted: (1) The hearing loss was inconsistent with the medical history and psychological examination. (2) His audiogram showed a very severe loss yet he heard normal conversation and his speech was not characteristic of deafness. (3) His hearing test showed that he heard speech better than pure tones or noise. (4) The psychologist reported emotional progress which indicated psychogenic involvement.

In this case, the galvanic responses were very clean-cut and indicated the presence of

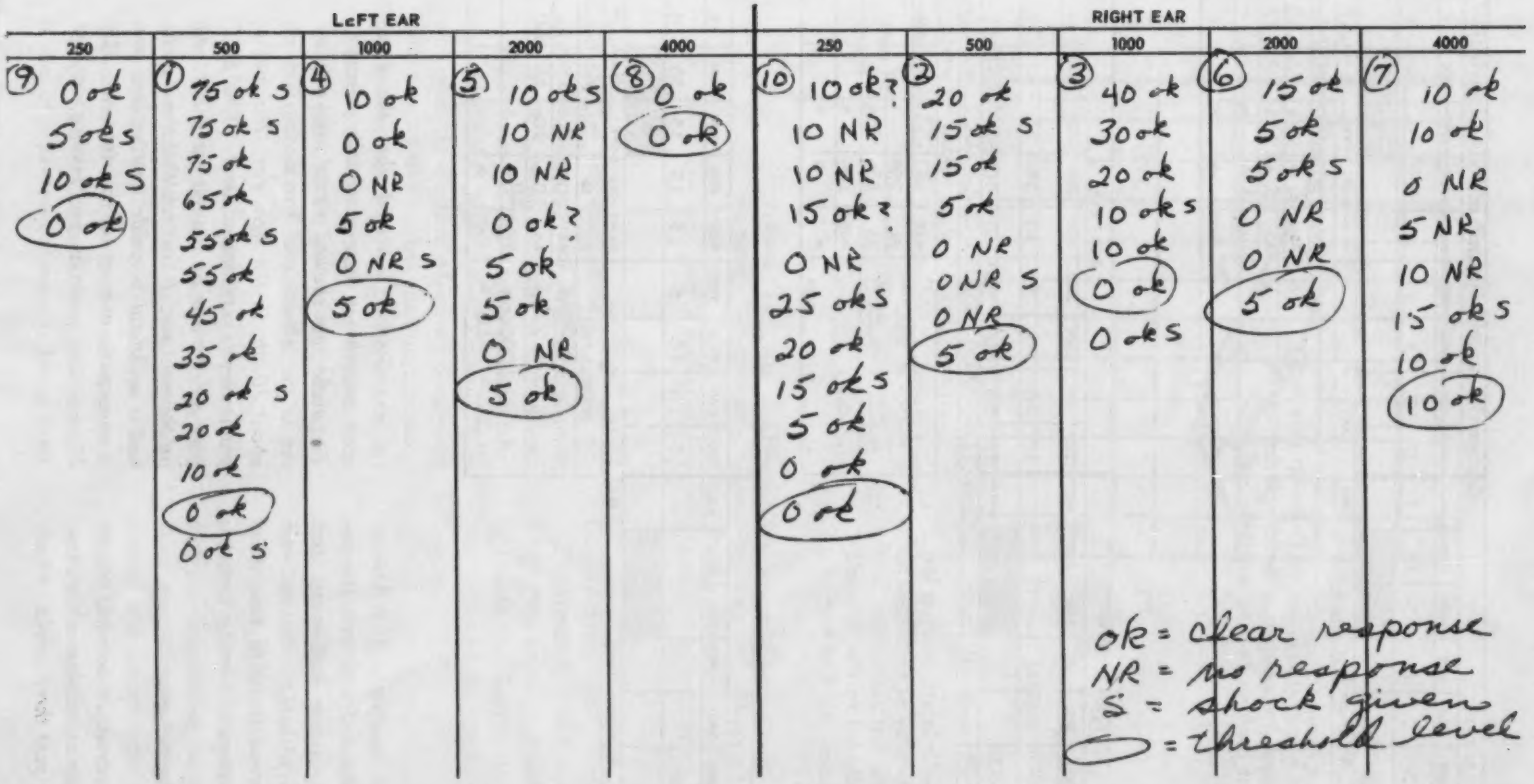
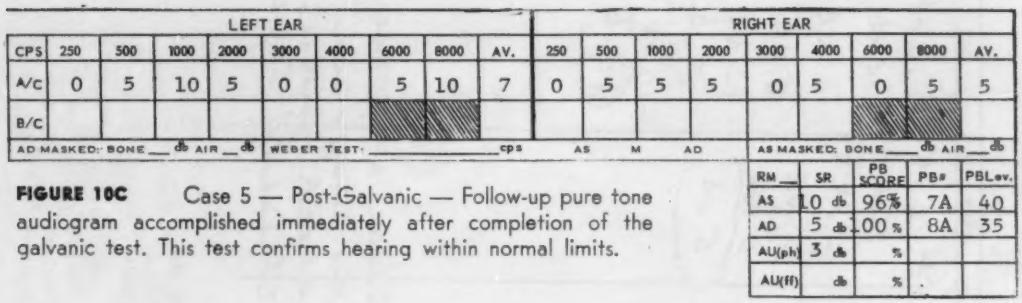


FIGURE 108 Galvanic audiometry worksheet for Case 5. Note circled values indicating db level at which audiologist felt patient was showing clear response to tone stimuli. Circled numbers in upper left of each column indicate order in which frequencies were presented to patient.

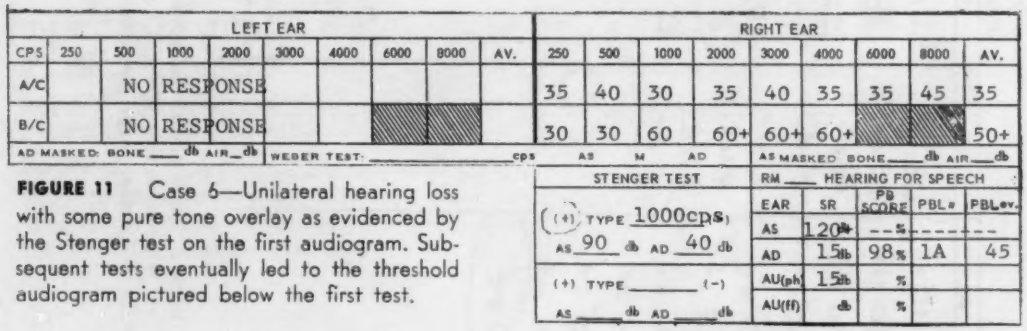


LEFT EAR										RIGHT EAR								
CPS	250	500	1000	2000	3000	4000	6000	8000	AV.	250	500	1000	2000	3000	4000	6000	8000	AV.
A/C	0	5	10	5	0	0	5	10	7	0	5	5	5	0	5	0	5	5
B/C																		

AD MASKED: BONE ___ db AIR ___ db WEBER TEST: _____ cps AS M AD AS MASKED: BONE ___ db AIR ___ db

RM ___	SR	PB SCORE	PB#	PBLev.
AS	10 db	96%	7A	40
AD	5 db	100 %	8A	35
AU(ph)	3 db	%		
AU(ff)	db	%		

FIGURE 10C Case 5 — Post-Galvanic — Follow-up pure tone audiogram accomplished immediately after completion of the galvanic test. This test confirms hearing within normal limits.



LEFT EAR										RIGHT EAR								
CPS	250	500	1000	2000	3000	4000	6000	8000	AV.	250	500	1000	2000	3000	4000	6000	8000	AV.
A/C		NO	RESPONSE							35	40	30	35	40	35	35	45	35
B/C		NO	RESPONSE							30	30	60	60+	60+	60+			50+

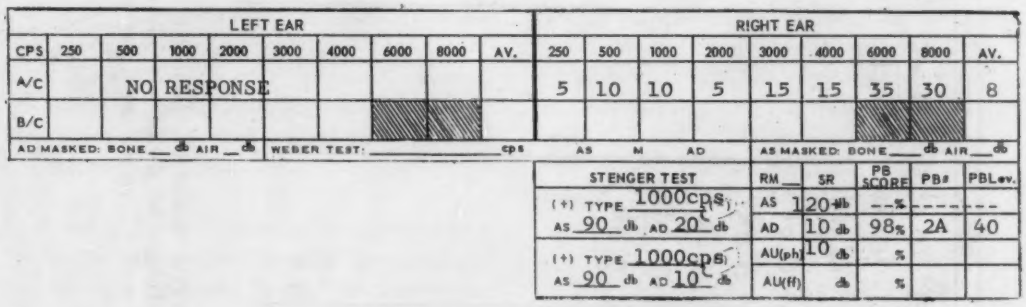
AD MASKED: BONE ___ db AIR ___ db WEBER TEST: _____ cps AS M AD AS MASKED BONE ___ db AIR ___ db

STENGER TEST: (+) TYPE 1000cps (-) AS 90 db AD 40 db (+) TYPE _____ (-) AS ___ db AD ___ db

RM ___ HEARING FOR SPEECH

EAR	SR	PB SCORE	PBL#	PBLev.
AS	120 db	--%		
AD	15 db	98%	1A	45
AU(ph)	15 db	%		
AU(ff)	db	%		

FIGURE 11 Case 6—Unilateral hearing loss with some pure tone overlay as evidenced by the Stenger test on the first audiogram. Subsequent tests eventually led to the threshold audiogram pictured below the first test.



LEFT EAR										RIGHT EAR								
CPS	250	500	1000	2000	3000	4000	6000	8000	AV.	250	500	1000	2000	3000	4000	6000	8000	AV.
A/C		NO	RESPONSE							5	10	10	5	15	15	35	30	8
B/C																		

AD MASKED: BONE ___ db AIR ___ db WEBER TEST: _____ cps AS M AD AS MASKED: BONE ___ db AIR ___ db

STENGER TEST: (+) TYPE 1000cps (-) AS 90 db AD 20 db (+) TYPE 1000cps (-) AS 90 db AD 10 db

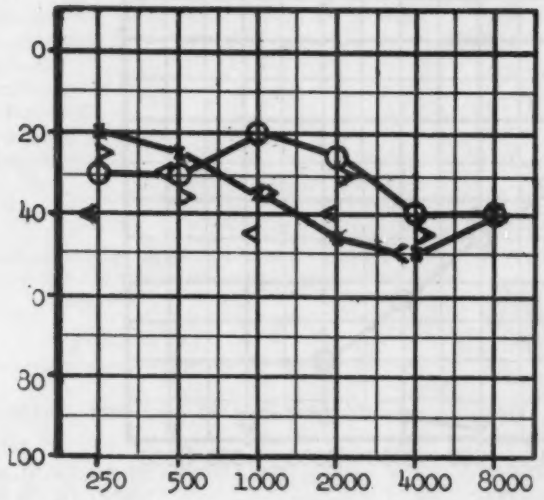
RM ___	SR	PB SCORE	PB#	PBLev.
AS	120 db	--%		
AD	10 db	98%	2A	40
AU(ph)	10 db	%		
AU(ff)	db	%		

essentially normal hearing. A follow-up subjective test correlated well with the results obtained on galvanic audiometry and showed conclusively that this patient had hearing within normal limits in both ears.

DIAGNOSIS: Nonorganic hearing loss, bilaterally.

TREATMENT: Psychological therapy.

CASE 6—*This was an 18-year-old recruit who claimed having a total loss of hearing, bilaterally, for the past three weeks. Physical examination indicated that the ears, nose and throat were essentially negative. The audiogram showed a total loss of hearing in the left ear and a moderate loss, of about 30 db, in the right ear. His audiograms were very inconsistent. The SRT gave no response on the left ear and 15 db on the right ear. It was felt that this patient had a unilateral bonafide hearing loss and a nonorganic overlay on the right ear. His history was positive for mumps at age 10.*



Male: Age 39
Etiology: Meniere's Syndrome
Degree: Moderate
Recruitment in left ear

A/C av.:	L 35	R 25
B/C av.:	L 38	R 33
SRT:	L 40	R 25
PB's	L 92	R 96

Hearing aid fittings:
Ear: Left
Tone: Flat Rec: Flat
Power: Medium
Battery: 1.25 v.

TEST CONDITION	SRT FF	PB's QUIET	TOL.	LARSEN	ATL	PBK
Unaided	23	96	No		86	58
Aided	Use 5	98	No	93	96	74
	Full 0		No			

FIGURE 12 Case 7—Hearing Aids for Sensori-Neural Hypacusia—Audiometric information for a case of Meniere's Syndrome. Included are scores for the Larsen and other tests used in evaluating this patient's rehabilitation progress.

CASE 7—*The audiograms in Figure 12 show the progression of hearing loss in a case of early Menière's Disease. The patient was a 39-year-old male master sergeant who was admitted to Walter Reed General Hospital with the classical Menière's Syndrome symptomatology; vertigo, tinnitus, fluctuating hearing loss.*

TREATMENT: A hearing aid was fitted to the left ear and the patient was placed in the full program of rehabilitation.

CASE 8—*Cogan's Syndrome, characterized by nonsyphilitic interstitial keratitis, severe to total hearing loss, and vestibular symptomatology, is rarely seen. Four cases are on record at the Army Audiology and Speech Center. The audiogram in Figure 13 is that of a 21-year-old male suffering from Cogan's Syndrome.*

TREATMENT: The patient was fitted with a high gain hearing aid although the amount of benefit was limited. In addition this patient received extensive training in visual hearing.

CASE 9: *Quite frequently, hearing loss may result from the intake of certain ototoxic drugs such as Neomycin or Kanamycin. The loss is usually severe and always irreversible. The audiograms in Figure 14, showing typical thresholds resulting from a high consumption of an ototoxic drug, are those of a 33-year-old captain who had been treated with heavy doses of Kanamycin. It should be noted that progression of the loss continued even after the drug had been discontinued.*

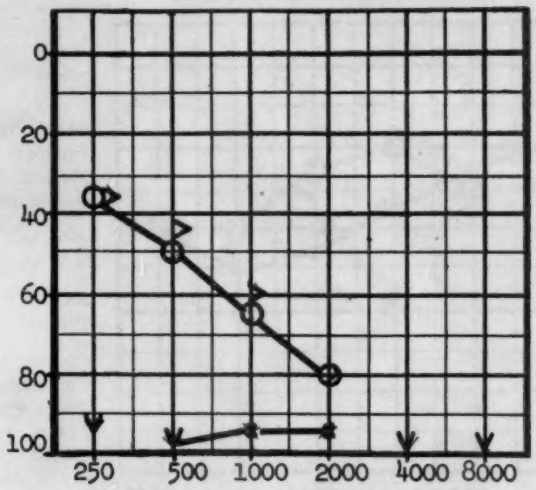
Hearing Aids for Sensori-Neural Hypacusia

Male: Age 21
Etiology: Cogan's Syndrome
Degree: Severe

A/C av.: L 97 R 65*
B/C av.: L NR R 55*

SRT: L NR R 65
PB's: L NR R 36

Hearing aid fitting:
Ear: Right
Tone: Flat Rec: High
Power: High
Battery: 2.6v



TEST CONDITION	SRT FF	PB's QUIET	TOL.	LARSEN	ATL	PBK
Unaided	65	36	No		0	0
Aided	Use 25	42	No	70	61	16
	Full 23		No			

FIGURE 13 Case 8—Hearing Aids for Sensori-Neural Hypacusia-Audiometric Picture of a confirmed Cogan's Syndrome. Notice poor, unaided scores on the primary training (ATL, PBK) tests.

	LEFT EAR									RIGHT EAR								
CPS	250	500	1000	2000	3000	4000	6000	8000	AV.	250	500	1000	2000	3000	4000	6000	8000	AV.
A/C	15	35	50	65	65	70	-	80+	5	25	50	50	55	-	65	-	75	75
B/C																		

AD MASKED: BONE ___ db AIR ___ db WEBER TEST: _____ cps AS M AD

AS MASKED BONE ___ db AIR ___ db

RM ___ HEARING FOR SPEECH

EAR	SR	PB SCORE	PBL#	PBLev.
AS	60 db	92 %	1A	90
AD	53 db	88 %	2A	83
AU(ph)	50 db	%		
AU(ff)	db	%		

FIGURE 14A—JANUARY

	LEFT EAR									RIGHT EAR								
CPS	250	500	1000	2000	3000	4000	6000	8000	AV.	250	500	1000	2000	3000	4000	6000	8000	AV.
A/C	75	80	100	100	-	90	-	80	93	75	85	80	95	-	80	-	70	87
B/C																		

AD MASKED: BONE ___ db AIR ___ db WEBER TEST: _____ cps AS M AD

AS MASKED: BONE ___ db AIR ___ db

RM ___

	SR	PB SCORE	PB#	PBLev.
AS	93 db	72 %	comfort	
AD	90 db	78 %	comfort	
AU(ph)	90db	%		
AU(ff)	db	%		

FIGURE 14B—JUNE

FIGURE 14 (A & B) Case 9—Audiograms taken six months apart showing progression of hearing loss due to ototoxic drug.

TABLE 1 HEARING LOSS IN THE ARMY (1947-1959)

TYPE	%	%
ORGANIC		97.5
Sensori-Neural	59.9	
Conductive	26.7	
Combined	10.9	
NONORGANIC		2.5*
Psychogenic		
Volitional		
		100.0

*About one-third of the patients tested routinely require additional testing to rule out nonorganic overlay; however, only 2.5% of the patients continue to show a nonorganic involvement

TABLE 2 ETIOLOGY OF HEARING LOSS*

CAUSE	%
NOISE-INDUCED HEARING LOSS	31.6
UNDERTERMINED	23.6
CHRONIC OTITIS MEDIA	19.8
OTOSCLEROSIS	16.0
NONORGANIC	2.5
VIRUS	1.9
HEAD INJURY	1.7
INHERITED TENDENCY	.9
MENIÈRE'S SYNDROME	.8
OTOTOXICITY	.5
MENINGITIS	.3
PRESBYCUSIS	.3
COGAN'S SYNDROME	.1
	100.0

*Table was compiled from patients seen at the Army Audiology and Speech Center, Walter Reed Army Medical Center, 1947-1959.

TABLE 3 NOISE-INDUCED HEARING LOSS ACCORDING TO TYPE OF ACOUSTIC ENVIRONMENT

SOURCE	PATIENTS	%
ARTILLERY	64	32.5
BLAST (Bomb, Mortar, Grenade and Explosion in General)	48	24.4
SMALL ARMS (M-1 Rifle, Pistol, or Light Machine Gun)	33	16.7
COMBINATION OF ARTILLERY FIRE AND SMALL ARMS FIRE	19	9.6
NOISE ENCOUNTERED IN THE FLYING PROCESS	17	8.6
WORKING ON FLIGHT LINE	9	4.6
ENGINE NOISE	7	3.6
TOTALS	197	100.0

Conclusion

In general, the classification of hearing loss in the Army, as determined by the patients seen at the Army Audiology and Speech Center, Walter Reed General Hospital, encompasses a wide area of ear pathologies. Table 1 illustrates the percentage breakdown under the two major categories of organic and nonorganic involvement. A further classification in regard to etiology is depicted in Table 2. It can readily be seen that noise-induced hearing loss accounts for the majority of hearing loss among military personnel. Further breakdown in terms of the actual kind of acoustic environment from which the noise-induced hearing loss grows is illustrated in Table 3. Of the one hundred and ninety-seven patients evaluated it is apparent that the greatest number of hearing loss cases are a result of exposure to artillery fire.

The fact remains, however, that regardless of the degree, pattern, or etiology of the hearing loss, the patient must be rehabilitated. He must be managed in such a way that the hearing loss, large or small, becomes a minor handicap, and he is once again able to function in a demanding world.

Acknowledgment: The authors express appreciation to Mrs. May Koenigsberg for her help in preparing this manuscript.

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Walter Reed Medical Center



"OFF THE RECORD . . . "

Share a light moment or two with readers who have contributed stories of humorous or unusual happenings in their practice. PAGES 25a and 29a.

Intoxications in Children

Intoxication in children may present itself with some bizarre clinical manifestations. Three brief case histories are presented as illustrative of this point.

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The First Child, an eight-year-old boy, was seen by the local physician with the complaints of fever, headache, nausea and vomiting. Since there were no positive physical findings other than mild pharyngeal injection and there was a current epidemic of gastroenteritis, the child was treated in the usual manner with an anti-nauseant suppository, clear fluids orally, and an injection of penicillin. Within four hours, the child had become irrational and semi-comatose. When admitted to the hospital, the child was comatose and had a positive bilateral Babinski but no other positive physical or neurological findings. A tentative diagnosis of encephalitis was made.

The Second Child was a six-year-old girl who had fever, vomiting and diarrhea. She was seen at the hospital emergency room where she was given some tablets to "settle her stomach." After taking one tablet, the mother noticed that the girl was staggering and unable to control her eyes. When hospitalized the child was irrational, ataxic and had loss of conjugate vision. There was no admission diagnosis.

The Third Child was a ten-year-old farm boy who had been treated for forty-eight hours by the local physician for fever and vomiting associated with an acute "strep throat." The child had been given daily penicillin injections and a tablet orally four times a day. He then developed spasmodic contractions of his neck muscles and trismus, these episodes lasting approximately five minutes and occurring every twenty to thirty minutes. The child also had difficulty swallowing and difficulty with his speech. The tentative diagnosis of tetanus was made and the boy was admitted to the hospital.

All three of these children were victims of iatrogenic poisoning inadvertently produced by their family doctors. All three children had completely recovered within forty-eight hours after discontinuing the drugs following their hospitalization. None of the drugs was given in a dose which exceeded the recommended safe dose for the size and age of the child. In the first instance the boy was given one 2.5 mgms. Compazine® (Prochlorperazine) suppository and in the last two instances the children were given 2 mgms. Trilafon® (perphenazine) tablets. Phenothiazine derivatives, such as Compazine, Trilafon, Thorazine® and Phenergan® may have bizarre toxic symptoms as well as a peculiar sensitivity that some indi-

viduals have to very small doses of these drugs. Toxic symptoms usually are manifested by neurological abnormalities such as seen in these children and are commonly initially diagnosed as tetanus, encephalitis, poliomyelitis or meningitis.

The physicians, however, are less often the culprits in intoxication of children than are the parents. Carelessness on the part of the parents is responsible for the great majority of childhood poisonings, this being the sixth most frequent cause of accidental death in children in the pre-school age. The frequency of types of poisons is shown in the accompanying chart (From the Chicago Poison Control Center—1953-54):

SUBSTANCE	NO. OF CASES	(PERCENT)
Medications	225	45
Cleaning Agents	112	22
Petroleum Distillates	56	11
Pesticides	52	11
Turpentine	23	5
Cosmetics	7	1
Miscellaneous	20	4
Unknown	5	1
Total	500	100

What can be done about this unnecessary toll of life among our children? The responsibility falls directly on the shoulders of the medical profession. In 1950, the Academy of Pediatrics established the Committee for Accident Prevention and Dr. Edward Press of that committee was instrumental in publishing, in 1955, a handbook for physicians entitled, "Accidental Poisoning in Childhood," which may be obtained from the American Academy of Pediatrics, Evanston, Illinois.

The committee has also established Poison Control Centers, one hundred ninety-three of which were available in forty-three states and territories as of October 1, 1958. The Poison Control Center is usually located in or in conjunction with a local hospital and functions as a source of information for physicians about poisonings. It also acts as a means of collecting information from the physicians for research on poisonings. Following the establishment of the local poison control centers, a National Clearinghouse for Poison Control Centers was established in 1957 by the Public Health Service. The National Clearinghouse collects information on poisons and poisoning from journals, industry and the poison control centers. This information is then tabulated, analyzed and disseminated to the local poison control centers. Another function of the National Clearinghouse is to help new poison control centers set up operations. They are assisted by the regional offices of the United States Public Health Service. A list of poison control centers in the United States may be found in the back of the Physicians Desk Reference (PDR) in a section devoted to poison and antidotes.

Summary

We, as practicing physicians, may discharge our responsibility for reducing accidental poisonings in children by:

1) Understanding the potential toxicity of drugs we prescribe.

2) Education of the parents about the dangers of drugs and household poisons carelessly left within their children's reach.

3) Cooperation with available poison control centers and

4) Establishment of poison control centers in areas where none is now available.

Mission Clinic, 5829 Woodson Road

Essential Hypertension

During the past decade, there has been developed a large number of potent drugs for the treatment of essential hypertension. The practicing physician can currently choose from a wide selection of therapeutic agents with varying pharmacologic attributes including thiazide derivatives, Rauwolfia compounds, Veratrum alkaloids, guanethidine, ganglionic blocking agents, and hydralazine. It is the purpose of this paper to consider an orderly approach to the selection of an effective therapeutic regimen for the ambulatory patient with essential hypertension.

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Salt restriction, rest and sedation, weight reduction in the obese patient and elimination of smoking have all been utilized as basic therapeutic maneuvers for the control of diastolic hypertension. The use of these measures is rational and their effectiveness is valid. However, they are frequently difficult to accomplish and when used as the sole agents for hypertensive control, their effectiveness is usually limited to patients with mild hypertensive disease.

The use of a low salt diet is a proven means for blood pressure reduction. Unfortunately, the dietary intake of sodium must be limited to 500 mgms. per day in order to achieve a significant blood pressure fall; and there are few patients who will consistently follow such an unpalatable diet for any considerable period of time. Likewise, the hypotensive effects of this regimen are rapidly reversed in two to three days following the discontinuation of the low salt diet.

The antihypertensive effect of frequent periods of rest and relaxation likewise cannot be overestimated; and the use of sedatives and tranquilizers such as phenobarbital and meprobamate may be particularly helpful in this regard. However, ambulatory patients with severe hypertension obtain only a slight hypotensive response to these agents, and the control of disturbing environmental influence is generally difficult to accomplish.

Weight reduction may also be helpful, particularly in the obese individual with mild hypertension. However, patients with severe hypertension are rarely helped to any significant degree by restriction in caloric intake. Likewise, the use of these diets are rarely sustained for adequate periods of time by most patients with or without hypertensive disease. Incidentally dextro-amphetamine (Dexedrine®) may be useful as an anorexogenic agent; a study by Kinard et al.[1] failed to show any con-

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vincing evidence that this drug aggravated the hypertensive process.

Finally, it has been shown that smoking frequently aggravates hypertension, since nicotine will stimulate sympathetic ganglia and also the neurogenic synapses within the central nervous system. Therefore, elimination of smoking can be a useful therapeutic measure. However, most patients become so dependent on the smoking habit that the anxiety and psychic trauma incurred by withdrawal far outweigh the benefits to be derived.

Thus although the general measures described above have a valid therapeutic basis, they have limited practical usefulness. Consequently effective control of hypertension depends for the most part on the use of specific drug therapy.

Specific Drug Therapy

THIAZIDE DERIVATIVES. Several members of the benzothiodiazine family including chlorothiazide, hydrochlorothiazide, and flumethiazide have demonstrated potent hypotensive abilities. Their mechanism of action is related, in part, to a reduction in plasma volume; but in addition the induced electrolyte disturbance in the tissues may also contribute to their mode of action.

A recent study by Rosenfeld and Brest[2] indicated a significant blood pressure reduction in approximately forty percent of the patients with each of the three thiazide derivatives described above. The usual dosage required is 500 mgms. twice daily of chlorothiazide or flumethiazide or 50 mgms. twice daily of hydrochlorothiazide. The incidence of side effects is low and approximately equivalent with all three drugs.

Maximum effectiveness is achieved when these drugs are used continuously rather than intermittently. In fact, the blood pressure will generally return to pretreatment levels if these drugs are stopped for a three day period. Sodium restriction should be practiced but should not be too rigid; specifically, a daily salt intake of three to four grams is recommended. Also, it has been our experience that prophylactic electrolyte supplements (including potassium) are rarely required if the dosage described above is not exceeded.

In addition to the blood pressure fall achieved with the use of the various thiazide derivatives singly, they will also potentiate the effectiveness of other antihypertensive agents. This attribute thereby allows a reduction in dosage of the second drug, in turn reducing the side effects encountered with both. This effect is illustrated by the finding that the addition of chlorothiazide to a patient on ganglionic blocking agents will generally allow a twenty-five to fifty percent reduction in dosage of the latter drugs.

RAUWOLFIA COMPOUNDS. The mechanism of action of the Rauwolfia compounds is still not completely understood. It would appear that depression of the sympathetic center in the hypothalamus is the major site of action. However, release of serotonin from binding sites in the brain and release of catecholamines from peripheral post-ganglionic sympathetic nerve fibers are important additional mechanisms.

A large variety of Rauwolfia compounds are currently available including the single pure alkaloids of Rauwolfia serpentina (including reserpine, rescinnamine and deserpidine) and various preparations containing multiple active alkaloids (including alseroxylon and whole root). There is statistically little difference in the hypotensive response to these different compounds. The major difference concerns the incidence of side effects which appears to be significantly less with the alseroxylon fraction (Rauwiloid®) and the whole root (Raudixin®) than with the others.

It is recommended that an initial loading dose of 8 mgms. of alseroxylon or 400 mgms. whole root or 0.5 mgm. reserpine be given for the first two weeks of therapy, since this period of time is required before maximum effectiveness is obtained when these drugs are used orally. Thereafter, these dosages can be reduced in half for maintenance therapy.

The most serious side effect encountered with the Rauwolfia compounds is the development of an agitated mental depression, the first symp-

tom of which is likely to be insomnia occurring in the early morning hours. This initial symptom may later be followed by a sense of impending disaster and even suicidal tendencies. It is interesting that the earlier manifestations of this depressive state, including the insomnia, will frequently respond to the use of dextro-amphetamine (Dexedrine). However, progression of these depressive symptoms must be considered an absolute indication for discontinuation of the drug.

HYDRALAZINE (APRESOLINE®). Hydralazine is a unique vasodilator agent which produces prolonged dilatation of constricted vascular smooth muscle. It is of interest that there is a maximal dose response curve beyond which further dilatation cannot be achieved even by huge doses of this drug. The effect of hydralazine on central mechanisms is probably minor.

The recommended initial dosage is 100 mgms. daily (25 mgms. after each meal and at bedtime). Thereafter the daily dosage may be doubled at weekly intervals until an adequate reduction in blood pressure is obtained or the incidence of side effects becomes prohibitive. Total dosage generally should not exceed 400 mgms. per day since the use of larger doses may be associated with the development of severe side effects and particularly a mesenchymal lupus erythematosus-like syndrome.

The major untoward effects observed with hydralazine include headache, palpitations and increase in anginal symptoms (due to the associated tachycardia). When used in combination with thiazide derivatives and/or Rauwolfia compounds these untoward reactions are considerably reduced. Therefore it is recommended that hydralazine not be used as a single antihypertensive agent.

GANGLIONIC BLOCKING AGENT. Multiple preparations are available including mecamylamine (Inversine®), hexamethonium (Bistrium®), pentolinum (Ansolysen®), and chlorisondamine (Ecolid®). The approximate equivalent dosages of these drugs are 250 mgms. hexamethonium, 25 mgms. chlorisondamine, 20 mgms. pentolinium and 2.5 mgms. mecamylamine. Their mechanism of action is related to interference of neurogenic transmission within sympathetic ganglia.

TABLE I METHOD OF DOSE TITRATION OF MECAMYLAMINE (mg.)

WEEK	7 A.M.	12 Noon	5 P.M.
1st	2.5	—	2.5
2nd	5.0	—	5.0
3rd	5.0	5.0	5.0
4th	5.0	10.0	5.0
5th	7.5	10.0	7.5
6th	7.5	12.5	7.5
7th	7.5	15.0	7.5
8th	10.0	15.0	7.5
9th	10.0	15.0	10.0

Determination of optimum drug dosage is dependent upon effective drug titration. It is extremely important to start with a small dosage of ganglionic blocking agent. Thereafter the dose can be gradually increased until the standing blood pressure is reduced to the desired level. As a further guide to proper dose titration, the therapist should make use of available historical information. For example, if the patient complains of attacks of dizziness occurring at specific times during the day this indicates that he is obtaining an excessive hypotensive effect at that time.

Table I illustrates a method of drug titration for mecamylamine. Final dosage is dependent upon the criteria listed above. Because the drug action lasts for a long period of time, the larger doses must be given in the morning and at lunch time. However, when the patients are relaxed in the evening, they do not require nearly as much. If the patients receive too large a dose at suppertime, they are particularly apt to experience hypotension upon arising in the morning.

Side effects with these agents are due to the simultaneous blockage of neurogenic transmission within parasympathetic ganglia. These untoward effects should be anticipated and properly treated; however they should not be feared. Constipation is the most common side effect and can usually be controlled with milk of magnesia (30 cc.) or cascara segrada (10 to

TABLE II COMPREHENSIVE THERAPEUTIC REGIMEN FOR THE TREATMENT OF HYPERTENSION

SEVERITY OF HYPERTENSION	INITIAL THERAPY	ADJUNCTIVE THERAPY WHEN NOT ADEQUATELY RESPONSIVE TO INITIAL THERAPY
Diastolic blood pressure < 120 mm. H.	Hydrochlorothiazide*	Rauwolfia
Diastolic blood pressure > 120 mm. Hg. but < 140 mm. Hg.	Hydrochlorothiazide* and Rauwolfia	Hydralazine
Diastolic blood pressure > 140 mm. Hg.	Hydrochlorothiazide* and Rauwolfia	Guanethidine or Ganglion blocking agent**

* May use other thiazide derivatives with equally good results. ** Must be added without delay when indicated.

30 cc. elixir) or prostigmin (15 to 30 mgms.). Likewise impaired visual accommodation and dry mouth usually improve with pilocarpine (5 mgms., t.i.d.) and urinary retention can generally be controlled with urecholine (5 mgms. t.i.d.).

GUANETHIDINE. Guanethidine is a new antihypertensive drug with a hypotensive potency similar to that of the ganglion blocking compounds. As with the ganglioplegic drugs, the hypotensive response obtained is most marked in the erect position; however in contract with the former group, the incidence of side effects is small. This new drug has a purely sympatholytic action consisting of inhibition of the peripheral release of catecholamines from the postganglionic sympathetic fibers. In contrast with the gangliopiegic drugs, guanethidine does not inhibit the parasympathetic ganglia and therefore is devoid of the distressing parasympatholytic side reactions seen with the former compounds.

The hypotensive potency of guanethidine is markedly potentiated by the therapeutic addition of the thiazide derivatives. In view of the latter effect and since the drug will undoubtedly be used most often in patients who are concurrently receiving thiazide derivatives and/or Rauwolfia, it is recommended that oral guanethidine be started in an initial dose of 20-25 mgms. daily. Thereafter the dosage can be increased by 10 mgms. increments at weekly intervals until a significant antihypertensive response has been achieved.

The hypotensive effect is usually delayed for forty-eight to seventy-two hours following oral administration. However the ensuing blood pressure reduction is generally prolonged once an effective response has been obtained. Therefore the drug can be administered in a single daily dose.

VERATRUM ALKALOIDS AND ADRENERGIC BLOCKING AGENTS. Multiple Veratrum alkaloids and adrenergic blocking agents are also available. However, the use of the former group is limited by the development of nausea and vomiting which frequently accompanies effective dose levels; and the use of the latter agents (including Dibenzyline, regitine and benzodioxane) has been disappointing because of the numerous associated side effects and the rapid development of tolerance.

Comprehensive Therapeutic Regimen

A comprehensive therapeutic regimen is outlined in Table 2. It is recommended that one of the thiazide derivatives be utilized as the initial therapeutic agent because of their (1) effectiveness, (2) relatively mild side effects, and (3) ability to potentiate other antihypertensive drugs.

If the thiazide derivative fails to achieve the desired response, a Rauwolfia compound should be added after one week. Thereafter,

if the blood pressure remains elevated after two or more weeks of combination therapy, hydralazine should be added according to the dose schedule described. Finally, if the hydralazine is ineffective, it should be abandoned in favor of guanethidine or ganglionic blocking agents when the hypertension is of adequate severity to warrant the use of these compounds. In addition in those instances of severe progressive hypertension, guanethidine or ganglionic blocking agents should be added to the therapeutic regimen without delay.

Summary

A comprehensive therapeutic regimen for the treatment of essential hypertension in the ambulatory patient has been outlined. It is now possible to control the overwhelming majority of hypertensive problems with the wide selection of potent antihypertensive drugs which are currently available.

230 North Broad Street

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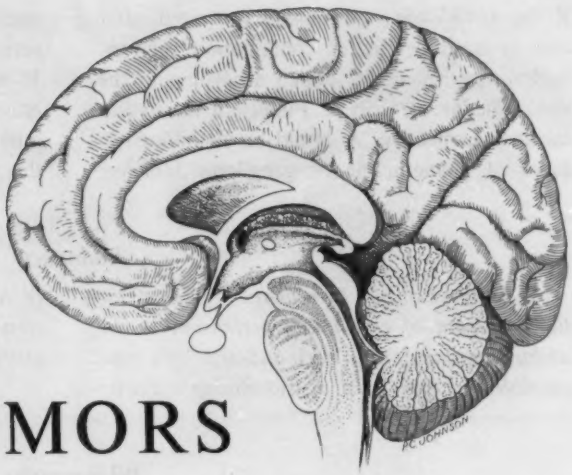


WHAT'S YOUR VERDICT?

In this issue and every issue, *Medical Times* presents authentic medico-legal cases and their interesting court decisions. Test your medical magistracy.

PAGE 55a

A SIMPLIFIED DIAGNOSTIC APPROACH TO . . .



BRAIN TUMORS

The diagnosis of brain tumors is not always an easy matter. This is especially true when the time allotted each patient is limited, as often occurs. This presentation attempts to make possible the diagnosis of such lesions more readily, even under such difficult circumstances by presenting the important features in outline form.

FRANK A. PALAZZO, M.D., St. Louis, Missouri

The symptoms of brain tumors can be divided into those which are obvious and those which are insidious or minimal.

A. OBVIOUS SYMPTOMS: These occur in two categories, indicating either marked increase in intracranial pressure, or irritative destructive phenomena affecting the brain. Symptoms of marked intracranial pressure are severe headache, vomiting, and varying levels of impaired consciousness, from drowsiness to coma. The irritative or destructive phenomena consist of convulsions, paralysis of varying degree, or severe speech disturbance due to aphasia. Because of the ease of recognition of these symptoms alone or in combination, and the common awareness of their possible significance, one readily suspects intracranial pathology. Whether it be neoplastic or vascular in origin can then be ascertained by relevant studies.

B. MINIMAL SYMPTOMS: The diagnosis is most often unsuspected or unduly delayed when the symptoms are minimal. The most important minimal symptoms often occur singly, especially in the early stages of the disease. These minimal symptoms are listed for brevity.

1. Headache
2. Personality change, mental dulling, etc.
3. Visual symptoms
4. Unsteady gait
5. Amenorrhea (or loss of potentia)
6. Cranial nerve paralysis
7. Persistent cervico-occipital pain
8. Mild hemiparesis
9. Aphasia

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1. *Headache:* Headache is the most frequent symptom seen with brain tumors. It is often the only symptom and the most frequently ignored indication of an intracranial lesion. This is easily understood when one is confronted with the great frequency and multiple causes of headache. Nevertheless, any headache that lasts more than a few weeks, in a person who never had them previously to any appreciable degree, should have the benefit of a thorough neurological evaluation, with more extensive studies, if indicated. Repeated, frequent observation of the patient is the best approach, if a careful examination reveals nothing at the first visit. A special location for the headache or its occurrence at a certain time of the day is not necessary. Look for a consistency of description of the headache and a persistence of the headache, often with progression in frequency and severity. A source of great difficulty is the tense patient with chronic headache, which one cannot ascribe to sinusitis, cervical spondylosis, migraine, refractive error, or nervous tension, with certainty. With such a patient, if no relief is afforded, minimal studies should be performed. The important thing is to initiate one's suspicion of the existence of an intracranial lesion. When the fundus examination reveals obvious papilledema, of course the patient is promptly on the road to positive identification and treatment of the intracranial lesion. Unfortunately, many physicians do not recognize the presence of papilledema when present. Papilledema may be the only finding in a patient with headache of persistent nature and if missed, even minimal studies for a brain tumor may be delayed unduly. Avoidable delay in treating a patient with brain tumor may often be the factor between a high risk and a relatively low risk for this patient's future. If papilledema is found by the initial examiner, the probable diagnosis is immediately evident. Occasionally, headache with papilledema is treated as hypertensive encephalopathy. If no response to treatment occurs, brain tumor must be ruled out. Brain tumors commonly occur with no papilledema, in which instance the normal appearance of the optic discs may further delay the diagnosis. In a patient with chronic, persistent headache, which is not responding very well to medication, a minimum study is justified consisting of skull x-rays, fundal examination, lumbar puncture if there is no papilledema, and a neurological evaluation, even in patients with limited funds. If the preliminary tests are suspicious or if symptoms persist even when the minimal studies are normal, more intensive studies are indicated, including carotid arteriography or air studies. The informal casual conversation with the neurologist or neurosurgeon is also of mutual benefit. A few moments discussion often helps resolve the disposition of the patient who has equivocal symptoms and may save valuable time as well as expense for the patient. A word of caution is urgent here, concerning the spinal puncture in patients with possible intracranial lesions, even when no papilledema is present. The initial and final pressure should be measured as usual, but no compression of the jugular vein for a Queckenstedt test should be permitted in any patient who has cerebral complaints, since a definite grave danger exists of herniation of the brain through the tentorial notch or the foramen magnum. This is true despite a recent trend to ignore this danger, as the result of lumbar puncture for partial pneumoencephalography. It must be assumed that any complications which may occur can be corrected promptly by those who perform these procedures.

In those patients who have severe headache, one is more apt to think of brain tumor, since the severity of the symptoms sounds the alarm for the physician who first sees the patient, even if unassociated with other marked findings such as drowsiness, vomiting, paralysis, or convulsions.

2. *Personality Change and Mental Dullings, etc.:* A change in personality and mental dulling or slowness, or confusion or memory loss is often the only symptom present with temporal or frontal lobe lesions. These patients not infrequently are found on the psychiatric ward, mistakenly diagnosed as psychoses,

usually of the depressive type. However, mental dulling and confusion are rarely seen in the depressed patient, unless shock or drugs have been given. The depressed patient is withdrawn, but not confused. When the above symptoms are seen with headache, even though the latter be mild, one should suspect a cerebral neoplasm or other space-occupying lesion. Personality changes manifest themselves often by change in life long habits such as care in dress, good manners, speech, and bodily cleanliness, or by indifference and lack of ambition. The patient may act a bit too jolly or jocular. The patient, more often than not, does not realize these changes exist or has a very plausible explanation for their existence. One usually must depend on the spouse or close relatives for a history of such behavior. Not infrequently, the spouse may also doubt and deny a personality change in the past, which the physicians may note only after examination. If such symptoms are present, one should always try to ascertain the presence of headache in the past. It is a continuing source of surprise how often the patient with a temporal or frontal lobe lesion will minimize or deny the presence of headache, apparently due to the indifference or forgetfulness associated with such lesions.

A brief neurological examination is essential here, especially an examination of the fundi to detect papilledema. Of these patients, one should well make a rule—never make a final diagnosis of senile degeneration or senile depression, without repeated neurological observations. This holds true, even in the absence of papilledema.

3. *Visual Symptoms:* Visual symptoms are occasionally the only symptoms complained of, and usually are of insidious onset. Gradual blindness in one eye may occur with complete loss of vision over several months and the diagnosis of optic neuritis is often postulated in such an instance. In any gradual loss of vision, the presence of pressure on the optic nerve by tumor such as a meningioma, must be considered, especially if the "optic neuritis" lasts over two weeks with no improvement.

A patient may complain of difficulty seeing objects to one side or the other in association with mild headaches. Such visual loss is due to defects in the visual field as a result of lesions in the temporal lobe or occasionally in the occipital lobe, involving the optic radiations. Loss of vision, also evident as visual field defects, may be the first sign of pituitary tumors or other tumors in the region of the optic nerve.

4. *Unsteady Gait or Incoordination of Limbs:* Unsteadiness of gait or incoordination in the use of the limbs is not infrequently seen as the only or the most predominant symptom of a brain tumor. Headache is usually present, but may be minimized, or discounted. Often these patients who have ataxia or vertigo may only have a labyrinthitis, which is quite common, of course. However, one must beware if headache is also present and is persistent. Occasionally, a patient with ataxia and associated hyptertension may be treated for weeks or months as a vascular insufficiency or hypertensive encephalopathy if papilledema with hemorrhages occurs. When one sees an unsteady gait or wide-based gait in a child as the main symptom, with or without headache, the probability of a brain tumor is high, but particularly so if vomiting or headache is present. In the adult, the presence of metastatic tumor lodging in the cerebellum is often first manifested by ataxia or cerebellar signs. Benign lesions in the same location often present in the same way.

5. *Amenorrhea or Loss of Potentia:* Amenorrhea in the female or loss of potentia in the male patient may be the first hint of a pituitary tumor. One should look for accompanying headache. If no cause for the amenorrhea can be found, an x-ray of the skull may reveal typical sellar enlargement. Further questioning usually reveals that visual loss has also occurred. Occasionally, a patient with an advanced pituitary tumor may complain only of generalized weakness and fatigue. The pasty skin color often simulates that seen in a patient with pernicious anemia. The fatigue and anemia with low blood pressure are actually manifes-

tations of marked hypopituitarism.

6. *Cranial Nerve Paralysis:* Indications of isolated cranial nerve paralysis may occur as the initial evidence of a space-occupying intracranial lesion. Diplopia and strabismus from a third or sixth nerve weakness may be seen. Extraocular muscle weakness with strabismus, or gross paralysis of gaze in any direction, when associated with progressive or persistent headache, should suggest brain tumor or other intracranial lesion. Paralysis of the lateral rectus muscle with increased intracranial pressure may occur, but often it is of no localizing value, since involvement of the nerve is due to the pressure upon the stretched sixth nerve as it runs across the floor of the skull, receiving the brunt of the increased intracranial pressure. When one sees an apparent Bell's palsy, which does not improve, and is associated with persistent headache, one should suspect a posterior fossa tumor. Anesthesia of the cornea due to involvement of the trigeminal nerve which the patient may or may not be aware of, is one of the earliest findings of a cerebellar pontine tumor. However, the patient may not complain of the anesthesia or decreased sensation of the cornea, which could be readily established on performing the corneal reflex test. When a patient with such a tumor is seen in the later stages, multiple cranial nerve involvement with severe headache and visual symptoms make a diagnosis quite simple, but the lesion is then far advanced and the mortality rate of surgery for such a patient is drastically increased, as compared to the surgical risk with the tumor in its earlier stages. Any complaint of numbness or decreased sensation of one side of the face can be checked quickly with a pin and a wisp of cotton. If such a sensory deficit exists and headache is also present, tumor in the vicinity of the Gasserian ganglion must be suspected. Symptoms of the lower cranial nerves are manifested by difficulty with articulation, difficulty in swallowing, and decreased hearing and tinnitus. However, these symptoms are infrequently seen as single findings in the presence of brain tumors. If present in combination, or if occurring singly, but with headache, tumor must be suspected until disproven.

7. *Cervico-Occipital Pain:* Persistent pain in the cervico-occipital region, particularly if unresponsive to symptomatic treatment, occasionally is due to a posterior fossa tumor. Such patients may have such pain as a chronic symptom, extending back many months or even years, existing as the sole complaint. This is particularly true of the benign slow growing tumors encountered here, such as a hemangioblastoma of the cerebellum. Such a lesion may simulate a cervical cord tumor, or severe cervical spondylosis if arthritic changes in the neck are marked. The latter usually responds to neck traction. Papilledema may be absent and x-rays of the skull normal with such a lesion and the only basis for suspicion of tumor in such a patient is the persistence and intractable nature of the pain. Papilledema may occur with the pain in a hypertensive individual and may be treated as a hypertensive encephalopathy for weeks or months. It is usually the prolonged refractoriness to treatment that finally causes concern over a possible brain tumor.

8. *Mild Hemiparesis:* A mild weakness of one side of the body which is transient, but tends to recur may be the clue to the existence of a brain tumor. Usually, such a lesion presents itself in the guise of a mild stroke, due to mild vascular insufficiency or thrombosis in the opposite cerebral hemisphere. However, if the latter is mild, and fluctuates considerably over several days to a few weeks, often varying in the degree of involvement of the opposite upper and lower limbs from day to day, brain tumor must be considered. Headache can be minimal.

The patency of the carotid artery tree in the neck should always be examined with such a patient to be sure carotid artery insufficiency in the neck is not the cause. Arteriography may be the only means of determining if carotid artery insufficiency does exist. With the mild fluctuating hemiparesis, the patient occasionally describes a numbness and tingling of the affected limbs.

9. *Aphasia:* Aphasia is occasionally the only symptom initially in the first stages of a brain tumor in the dominant cerebral hemisphere, although more often it is present along with other symptoms, such as headache or mild hemiparesis. The aphasia is manifest by difficulty comprehending the meaning of the spoken or written word or in formulating speech, and the difficulty may be slight or quite marked. Sometimes, focal seizures without paralysis may be associated with the speech disturbance and headache may be minimal or absent. The lack of headache in such a patient is due partly to the infiltrating or slow growing nature of the tumor, and partly due to temporal lobe involvement. The latter often results in a dulled sensorium, such that awareness of headache is blunted.

Most commonly an isolated aphasia, especially in an adult over forty-five years of age, will be ascribed to a cerebral vascular thrombosis, even with an occasional Jacksonian seizure. However, it is the persistence of the aphasia and its gradual progression which should alert one to the probability of tumor of the brain. A progressive cerebral thrombosis resulting in increasing aphasia, without a correspondingly increasing hemiparesis, is not very likely and should arouse suspicion. If the aphasia is of mild to moderate degree and varies in severity, it may be considered functional at first, until the disease manifests itself by other symptoms later on.

C. EXAMINATION: At the initial visit to the physician, all patients who have symptoms of persistent headache of unexplained etiology or who have the minimal symptoms just described, should receive a brief neurological examination. A brief neurological examination can be performed quite adequately and rapidly by most physicians in a few moments. A simple outline follows of brief points in a quick examination for any intracranial lesion.

1. *Note the Gait:* Dragging, staggering, slow, etc.

2. *Expression or Manner:* The patient may seem bright, dull, dazed, or slowed, voluble and jocular or withdrawn, cooperative, or indifferent, even negative to a degree resembling catatonia. Dress may be untidy and one often observes the obvious unawareness of lack of modesty in attire and posture.

3. *Speech:* One should look for difficulty in selecting words properly to formulate speech, and difficulty with comprehending the spoken word in patients with sensory or motor aphasia. This should be distinguished from the actual slurring of pronunciation of a word which is due to poor articulation resulting from actual paralysis or incoordination of movement of tongue muscles proper. The latter indicates a brain stem lesion as opposed to a lesion in the cerebral hemispheres on the dominant side. Occasionally, a drowsy or mentally-dulled patient will speak in slurring manner in which case the alteration of speech is due neither to dysarthria nor aphasia.

4. *Fundi and Fields:* Herein lies the most glaring defect in the neurological examination by many physicians. If one is uncertain of the examination of the fundi, repeated examination of the undilated eyes of just a few patients each week will enable the examining physician to recognize the abnormal appearance of the optic discs, which should suffice to start the patient on the road to proper therapy. Gross confrontation tests for each eye using a wiggling finger will pick up most large defects in the visual field of each eye.

5. *Cranial Nerve Examination:* Note chiefly the pupil size and reaction, gross nystagmus, abnormal extraocular muscle movements, gross facial weakness, hearing loss, swallowing, and speech.

6. *Gross Weakness of the Limbs* can be tested by brief testing of the grip and gross arm and leg action.

7. *Coordination Tests:* Simple finger to nose and heel to knee testing and a brief check of the gait should suffice.

8. *Reflexes:* The deep reflexes should be compared for degree of activity, comparing both sides. Superficial reflexes, namely the stroking of the abdomen, and cremasteric reflex in the male, can be performed rapidly.

9. *Babinski:* Babinski signs can be noted

as equivocal or markedly positive.

10. *Sensory Examination:* A detailed sensory examination usually is not feasible when time is at a premium, but rapid testing of gross pinprick for the presence or absence of sharpness in a suspected area and a test for corneal anesthesia using a twist of cotton should suffice until a more thorough examination can be performed.

A check list of these for brief neurological examination is helpful.

Discussion

A three minute examination for each patient with a persistent headache of undetermined origin or with a personality change or mental dulling, is very little time to spend for the probable rewards and is certainly indicated. This permits the physician to recheck the findings periodically, if no abnormal findings are found, with a fair degree of assurance that no gross intracranial lesion is present. If the symptoms persist or worsen on repeated visits, with no response to a trial of treatment, the physician can then obtain more intensive studies and consultations, particularly if the repeated examinations reveal further neurological changes.

It is a good rule that all patients with refractive headaches should have skull x-rays and a chest x-ray. The chest x-ray should be routine in any suspected neurologic lesion. Not infrequently, a silent primary lesion in the lung may be found. On the other hand, an inflammatory lesion may indicate intracerebral pathology other than tumor. An electroencephalogram can also form part of the preliminary neurological evaluation. If a space-occupying intracranial lesion seems probable, more complete studies can then be begun, including arteriography, air studies, or radioactive tracer studies for localizing the cerebral lesion.

Summary

Detection of the symptoms of brain tumor, in the early stages, is possible even when time is limited. The diagnosis is not a problem in the presence of symptoms of marked intracranial pressure, such as persistent headache, vomiting, or impaired level of consciousness; nor is it difficult to suspect a brain tumor when irritative-destructive phenomena are present, such as convulsions, gross paralysis, or severe aphasia. However, the early minimal symptoms are those which escape one's notice most often. Of the minimal symptoms discussed above, headache and personality change, with mental dulling, are the most important, percentage-wise. If attention is directed to these, the patient for whom these findings persist, will receive the further attention needed to confirm or disprove the existence of a brain tumor. Therefore, any patient with persistent headache, with none of the responses to treatment seen with sinusitis, tension state, migraine, etc., or the patient with personality changes or mental dulling, should be marked as a brain tumor suspect until proven otherwise. The same holds true for those patients with focal signs of slight degree, or isolated cranial nerve signs, particularly if associated with headache.

In children, minimal symptoms are the usual story and one should suspect brain tumor in any child with protracted vomiting or wide-based gait. The early recognition of brain tumor symptoms renders the greatest benefit to the patient and the fullest gratification to the alert physician. The basic requirement, of course, if the awareness at all times of the possible existence of a brain tumor in patients with the minor complaints described.

The oft-repeated advice of that kindly gentleman of medicine and neurologist extraordinary, Henry W. Woltman, that time is the finest diagnostician of neurological disease is amply confirmed as one follows brain tumor patients with minimal symptoms. Nevertheless, one must be on guard against letting time diagnose the disease for the physician at too advanced a stage.

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Homosexual Transmission of

There is increasing evidence to indicate that sexual perversion is common in all strata of our society today and that a high incidence of venereal diseases is found in these sexual deviates. These facts must be kept in mind in the evaluation of patients suspected of having a venereal disease.

Venereologists have long recognized that venereal diseases are often transmitted by homosexual practices. Unfortunately, many physicians tended to underestimate both the high incidence of homosexual behavior in general and the frequency with which venereal diseases are transmitted by homosexual activity.

Apparently there is such abhorrence of sexual perversion in our Anglo-Saxon Culture that many physicians simply blind themselves to the existence of fellatio, sodomy, incest, and other immoral behavior patterns. Venereologists, both here and abroad, continually report examples of anal, rectal, and oral chancre and repeatedly warn that extragenitally-acquired infection is probably more common than a summation of the reports in current medical literature reveals. The average physician often assumed that these "rare" situations would not occur often in his practice. This is probably a false and misleading assumption.

Frequency of Homosexual Behavior

In 1948, Kinsey et al. presented their fine report of sexual patterns in the American male.[1] The Kinsey Report revealed that *at least* thirty-seven percent of American white males engage in some overt homosexual act between adolescence and old age and that *at least* ten percent are predominately homosexual for periods of three years or longer during active sex life. Their estimates of homosexuality were generally higher than any previous estimates but, at the same time, may be actually a bit lower than the true incidence. There is some evidence to suspect that the percentages for the American Negro male may be even higher. Larsen and others have shown that homosexuals generally are more promiscuous than their heterosexual counterparts; so a high incidence of venereal infections in sexual deviates certainly should be expected.

In 1959 at the Venereal Disease Clinic of the City of Richmond Health Department, fifty-seven percent of the early infectious syphilis diagnosed in males occurred in known homosexuals.[2] For granuloma inguinale, the incidence was one hundred percent. For gonorrhea, the figure was only seven percent; but the inherent difficulties of diagnosing gonorrhea in the passive homosexual contact causes us to believe that the true figure would approach fifty percent, if more accurate diagnostic methods were available.

These findings are not limited to one city or one region. Similar estimates were reported from many other parts of the U. S. and Canada, at the Eleventh Annual Symposium of Recent Advances in the Study of Venereal Diseases.

Venereal Diseases

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Recognizing the Homosexual Patient

Hugo Hecht[3] and others have suggested various criteria to recognize and manage the problem of homosexually-transmitted venereal diseases. A most important factor is the realization that the situation may arise frequently even among well-to-do private patients, and a high index of suspicion must be maintained. The physician should recall that rectal chancres have been misdiagnosed as "malignant tumor" and surgically removed on several occasions.[4] Since the anal chancre may simulate the common fissure-in-ano, the possibility of syphilis should be considered in all patients with this condition.

The rectal lesions of gonorrhea are more difficult to diagnose. The infection remains asymptomatic for weeks or even months. Eventually, symptoms of constipation, bloody discharge or purulent discharge (late) and other symptoms of proctitis develop. Unfortunately, rectal smears frequently are negative in the presence of gonococcal proctitis, and the diagnosis often must be made (as in females) on the basis of information given by the aggressive male homosexual.

Close scrutiny of the history of the male patient requesting a "check-up for V. D." may be more helpful in identifying the homosexual patient than his overt appearance. Superficially, the homosexual will behave like any other patient, except he may be overly courteous, and very neat (he most always washes his hands after the examination). He will usually say that "a friend (frequently, from another city) has written advising that he has a venereal disease." He will usually add "I was there on business, and we dated the same girls." Since homosexual behavior is a crime in most communities, the patient is not apt to reveal his abnormal sexual relations to the physician unless pressed to do so.

Many times he will be reluctant to discuss the mode of infection and, if pressed for contacts, will either give none or ones with vague, false leads.

Probably the most important factor in establishing a correct diagnosis is the contact interview of the patient. Many physicians are not familiar with the art of contact investigation. Fortunately, however, many local and state health departments have trained and skilled epidemiologists available to aid the private physician in this regard. Generally, patient inquiry into the possibility of homosexual behavior—if done in an understanding manner—will bring out the true facts in the average case.

Mis-diagnosis in Latency

Because of the absence of genital lesions, many homosexuals may not seek medical attention during the early stages of syphilis and will present themselves later, during latency, with a reactive serologic test for syphilis (S.T.S.). Undoubtedly, many of these patients with reactive tests in low titre "with

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no history of lesions" have been mis-diagnosed Biologic False Positive (BFP) S.T.S. In view of the frequency of homosexually-acquired infection, it would appear important to rule out this possibility in all patients suspected of having a BFP reaction.

Conclusions

The incidence of syphilis has been slowly increasing during the past two years, and the majority of patients with venereal disease are being seen by private physicians rather than by Public Health Clinic personnel. So all physicians may expect to see more syphilis and more homosexually-acquired venereal disease in the future. A high index of suspicion, recognition of the possibility of extragenital lesions, close scrutiny of the history, and use of contact investigation facilities, will reward the careful physician with accurate diagnosis and adequate treatment of the homosexual with venereal disease.

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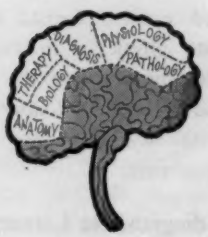
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MEDIQUIZ . . .

Working alone or with your colleagues you'll find this is no snap.

PAGE 77a.

IRON THERAPY

A STUDY OF VARIATIONS IN ESTEEM

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The use of iron therapeutically is almost as venerable as the history of medicine itself. A symbol of strength in the times of Hippocrates and of Galen, iron had the particular blessing of Mars, the god of War. Swords were allowed to rust in water which was then given to patients complaining of general weakness. Among such cases, those based upon iron-deficiency may thus have derived benefit.

Since those far-distant days, the reputation of iron as a remedy has waxed and waned. Historical studies yield morals which are applicable even under modern conditions of practice with their emphasis upon scientific investigations, morals which can perhaps be best appreciated by the reflective general practitioner who must place prime reliance on his clinical acumen.

As precise a starting-point as can be found was the recognition by Johannes Lange early in the sixteenth century that chlorosis, an extreme form of iron-deficiency anaemia, rarely seen nowadays, would respond to the administration of iron. A peak was reached in the seventeenth century with the prescription of iron formulated by Thomas Sydenham which allowed a daily dosage of ½-1 gramme of the metal, substantially more liberal than had ever previously been used.

There was, of course, no separation of one type of anaemia from another at this time nor yet for many years to come; in addition, availability for absorption and utilization of the iron in the various concoctions prescribed must have varied widely. It is far from remarkable, therefore, that for nigh on two centuries more the repute of iron as a remedy for "pale people" could not be described as outstanding. Significant peaks were reached in 1713, when it was shown that iron was indeed a constituent of the blood, and again in 1746, when patients with low blood iron content were found to improve when given food known to contain iron.

Major advances were made by Pierre Blaud who introduced, in 1831, his combination of ferrous sulphate and potassium carbonate; each formed pill contained about 0.3 gramme ferrous sulphate. Blaud recognized that in some anaemias a colouring substance was deficient in the blood, that this substance contained iron and that therapeutic iron would restore quality to the blood. He advised a scale of increasing dosage to permit toleration, taking at least two weeks to work up from two pills to twelve pills daily. This gave the cardinal principles of the use of a ferrous salt and of the use of high

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dosage, principles which only now are being reasonably modified, principles which were upheld by such major figures as von Niemeyer, Innerman and Osler.

And yet iron fell into disrepute between 1890 and 1920. In part, this was due to failure to overcome the problem of intolerance to the sulphate and, in part, to neglect of the necessity of using only freshly-prepared Blaud's pills as these harden on storage and then pass through the gut unabsorbed. It was about this time, too, that Bunge advocated the use of organic salts, contending that inorganic iron was converted in the intestines to the sulphide which could not be assimilated. Both MacCallum and Stockman convincingly refuted this argument but, for the time being, the damage was done. Furthermore, therapeutic dosage was diminished when it was shown that only a matter of milligrammes of iron are and can be metabolized daily; why, then, give more? Williamson and Ets, in 1925, purported to show that inorganic iron was not incorporated into haemoglobin and thus could not be valuable as a remedy. From Germany, from Denmark and from the United States came evidence, clinical and experimental, in decisive rebuttal. When Russell Haden, in 1938, reviewed the development of iron therapy he concluded, in effect, that the crest that then had been reached was due to renewed emphasis upon Blaud's principles of ferrous salts in heavy dosage.

And now, twenty years later, we are again in the doldrums. Why? I believe we have to come back to the question of precision in diagnosis. I believe that the availability and use of shotgun or blunderbuss haematinics foster diagnostic carelessness. We must reiterate certain fundamentals.

(1) Clinical (as opposed to laboratory) diagnosis of anaemia is one of the most fallacious ventures in the whole practice of medicine;

(2) The demonstration of anaemia must be followed by evaluation of the type of anaemia present and this cannot be done simply by a single haemoglobin estimation;

(3) As a minimum, values for haemoglobin, haematocrit, and red cell count must be available, the mean cell volume and haemoglobin concentration calculated, and, a point of major importance, a well-prepared smear examined by an experienced eye;

(4) The cause of the anaemia must be ascertained;

(5) With certain rare exceptions, anaemia consequent upon iron depletion will respond to judicious oral iron therapy.

The anaemia of iron depletion is characterized by cells of normal or, more often, small size with low content of haemoglobin per unit volume (low mean corpuscular haemoglobin concentration). But not every microcytic hypochromic anaemia is due to iron lack. There may be, for example, failure of haemoglobin synthesis, as with chronic infections, with chronic renal disease or with thyroid hypofunction. Or there may be present Thalassaemia or an "abnormal haemoglobin" syndrome. Thus the emphasis upon interpretation of the blood findings in the light of the clinical picture and also upon the value of a reliable report on the morphology of the red cells as seen under the microscope. These various anaemias will not respond to iron therapy and this sometimes may be of diagnostic importance. Hypochromic anaemia unresponsive to iron by mouth but susceptible to parenteral therapy is suggestive of, among other things, steatorrhoea which may be occult or "subclinical."

Dismissing from attention such special instances, it is axiomatic that iron depletion means inadequate diet, impaired absorption or, and above all, chronic blood loss. The rôle of defective intake is important in poverty, in food faddism and in woman of all classes and in all climes. The part played by gastric hypochlorhydria has been much exaggerated in the past; it is now realized that it may be a consequence, rather than a cause, of iron lack which affects the body generally and epithelial surfaces in particular.

The combination of borderline dietary intake, menstrual loss and pregnancies makes

women vulnerable. Nonetheless, it should be kept in mind when dealing with women about or beyond the age of forty that another cause may be present, cancer of the stomach or of the large bowel as examples. And this search for the cause must be pressed ruthlessly when it is a man who shows iron depletion. Oesophageal varices, peptic ulceration, gastric cancer, large bowel cancer, prosaic piles; all these must be excluded. As the anaemia may be the first outward manifestation of trouble, mere absence of relevant symptoms is not enough to warrant temporizing; quite the contrary.

Now, as to management. This resolves into elimination of the source of blood loss where present and where remediable, together with the use of a therapeutic preparation of iron. Mere correction of poor dietary habits, although it should be done, is not in itself enough.

In some instances, anaemia is so far advanced that orthopnoea and pulmonary congestion are present as evidence of congestive cardiac failure. Such an alarming picture most often is seen in women in middle-life in whom abrupt aggravation has been provoked by menorrhagia. The volume of blood lost may seriously be overestimated if only the haemoglobin level is considered and not also the type of anaemia present with realization that blood values before the "trigger" haemorrhage were already considerably lowered. Injudicious transfusion may then compound congestive failure even to mortal degree. Alternatively, hysterectomy may be contemplated or carried out, despite the poor general condition of the patient whose entire body suffers from iron depletion and from the effects of prolonged anaemia. Transfusion carries a particular hazard of cardiac overloading in instances of severe chronic anaemia, in which cases circulatory dynamics are already in perilous balance; fortuitous occurrence of a "febrile" transfusion reaction, a fairly common event, would increase this risk. And this is, of course, in addition to the regular dangers of blood transfusion such as incompatibility, due to technical difficulties or to human error, and such as the unavoidable transfer of hepatitis virus. Thus, it is better to approach chronic anaemias with a specific therapeutic agent where such is applicable and to reserve cautious transfusions, preferably of "packed cells," for those patients in whom there is no alternative. To revert to women with hypochromic anaemia and menorrhagia, it must be realized that severe anaemia, presumably by influencing capillary permeability, may be complicated by a bleeding tendency which may initiate or aggravate undue menstrual or intermenstrual loss. Rest and iron usually suffice rapidly to alleviate the situation. Hysterectomy, if necessitated by demonstrable lesions in the uterus, may be carried out later, leisurely and with the patient in optimal condition to undergo major surgery.

In most instances, iron is effective when given orally. A large variety of preparations is on the market, from the traditional sulphate to the most recent "chelate." The iron compound may be alone or with vitamins, B_{12}, folic acid, intrinsic factor and "trace" metals. The clinician is inundated by commercial literature containing a bewildering assortment of claims for different salts, for different adjuvants and for different mixtures. The simple fact of clinical importance is this; that in a case of iron-deficiency anaemia susceptible to correction by iron given by mouth, virtually any preparation will work if tolerated and if given in adequate dosage for a sufficient length of time. Differences therefore are matters of tolerability, of cost and of convenience of prescription. The sulphate is absorbed well and it is cheap; unfortunately it causes gastrointestinal upset in a large minority of patients, especially if dosage is not regulated along the lines suggested by Blaud, an inconvenience. Ferrous calcium citrate shares with the sulphate the distinction of being best absorbed, but it is superior in that intolerance to it is rare and manifest only as mild diarrhoea or constipation almost invariably amenable to correction by trivial alteration in the mode of presentation. If pressed to single out any one preparation at present available, based on my own experience I would choose this particular com-

pound for routine use. However, there are others which deserve honourable mention, the gluconate, the succinate and the fumarate, as examples. I am even now trying out a new chelated compound which looks promising as being equally effective at lower dosage.

As to adjuvants, unless there is actual deficiency of the substance in question, nothing is gained by their incorporation. On the contrary, the use of blunderbuss remedies ("containing all known haematinic factors") cannot but lead to laziness in diagnosis and occasionally, the masking of other conditions, true "pernicious" anaemia in particular, with consequent dire results. Here I must exclude dietary supplements used in and restricted to pregnancy and convalescence.

Occasionally, one is faced with failure of oral iron therapy. This is an indication to review the diagnosis along the lines mentioned earlier. If steatorrhoea is demonstrated or if the patient is suspected of neglect to take the pills, then the parenteral route may be adopted. For this purpose, the saccharated oxide of iron has been available for some ten years and it is highly effective. However, it must be given intravenously, slowly and with great care to avoid leakage into surrounding tissues; furthermore, reactions may occur. For these reasons, attention has now been turned to an iron-dextran complex quite recently evolved and which may be given intramuscularly. Even if, as now seems likely, not all of this material is utilized for haemoglobin synthesis, it is nonetheless safer and much more convenient to use. Parenteral iron allows a somewhat more rapid response than can be achieved by oral therapy and this may be a valid reason for its use if time presses.

A point of debate and the essay will end. If a patient with hypochromic anaemia is given iron orally and responds well, is it possible also to replenish iron reserves in the body and, if so, how long does it take? If this is not possible or if it calls for unduly prolonged treatment, is it advisable routinely to climax oral therapy with, say, 1,000 mgms. of iron-dextran by injection? The only method available to assess iron reserves is to demonstrate the presence or absence of stainable iron granules in aspirated bone marrow material. It is with this approach that I am now attempting to satisfy my own curiosity regarding these questions.

Saint Mary's Hospital

CLINI-CLIPPING

Milk seeping from engorged breast. So-called "witch's milk," due to presence of maternal hormone transferred via the placenta (After Anderson).



PANEL DISCUSSION CONCLUDED

The Prophylactic Use of ANTIBIOTICS

DR. PERRIN H. LONG, Moderator
Chairman, Department of Medicine, the Downstate Medical Center, State University of New York.

DR. ROBERT AUSTRIAN
Professor of Medicine, Downstate Medical Center, State University of New York.

DR. DAVID E. ROGERS
Chairman, Department of Medicine, Vanderbilt University Medical School.

DR. ROGERS: We might first state the area in which resistant staphylococcal infections are a problem. This is a phenomenon of our age. It is an intra-hospital phenomenon, I think in part because of the biology of the staphylococcus. First, it is a very hardy organism. Secondly, it is one which lives with most of us. Thirdly, it is an organism which has rather unique propensities to develop resistance to antimicrobials which are in wide use. We have in essence established hospitals as great reservoirs of drug resistant strains of staphylococci which are capable of producing infection. I think the areas in which we have seen major difficulties with resistant staphylococcal infections are as follows:

We have seen them develop in patients who have either local or generalized alteration in host susceptibility. I think it is fair to state that staphylococci rarely produce serious infection in the otherwise healthy human. We see epidemic problems of infection within hospitals with resistant infections in two major groups. First, the newborn infants. Here the vast majority of our infections have been due to one very specific phage type of staphylococcus, the 80/81 strain. Secondly, we have seen epidemics arise in patients who have had operations. We have not seen epidemic disease in the medical services, but we have had serious problems with staphylococcal infection in patients who had other serious unassociated disease. Because we have drugs that prevent many types of infection from arising in these patients, the type of infection which patients are going to get and from which some of them are going to die. In a significant percentage of patients these infections have been produced by staphylococci that are broadly resistant to drugs.

DR. LONG: Do you think, Dr. Rogers, that we have anything better at the present time than the strictest contagious disease techniques, aseptic technique so-called, to combat an outbreak of this type in a surgical or in an obstetrical ward?

Held at the New York Academy of Medicine, 2 East 103 Street, New York 29, N. Y. on April 10, 1959.

DR. ROGERS: I think we do Dr. Long. If one isolates the organism and determines its drug sensitivity, one can sometimes stop or abort an epidemic by the use of an appropriate drug. Though it is clear that over the long haul we must revise technique to prevent infections from recurring occasionally and treat not only the babies but the personnel who are carriers with appropriate drugs and prevent further cases from appearing. So I think there is more that can be done in the immediate situation but over the long haul, drugs do not have a very important role to play in prevention of staphylococcal disease.

DR. LONG: What's your thought about this matter of what we can do about it, Dr. Austrian?

DR. AUSTRIAN: Well, I think environmental sanitation is the subject that requires re-emphasis. This view has been a rather widely held one. In recent years there has been a tendency, particularly with the shortage of personnel in hospitals today, to count on antimicrobial agents to replace certain types of environmental sanitation which were practiced formerly in hospitals. And I think the experience has been such as to indicate that the outcome thereof has not been a very happy one. One can certainly suppress very temporarily an outbreak of staphylococcal infection, if he has a drug to which a given strain of staphylococcus is highly sensitive, but this measure will provide only a very temporary amelioration of the problem. With the exception of its relation to one or two highly toxic antibiotics, the mutational potential of staphylococcus is such that it can give rise to variants which are resistant to all the bacteriostatic and a good many of the bactericidal drugs which we now possess.

DR. LONG: I just picked this out of the *Lancet* the other day. All samples of airborne dust collected in three hospitals in England consisted essentially of cellulose fibers. Very few wool fibers were found. Most samples subjected to bacteriological examination contained coagulase positive Staphylococcus aureus. This suggests that cross-infection with Staphylococcus aureus is primarily due to the transfer of bacteria by some agency other than fluff from blankets and that therefore replacement of wool blankets with those made from other textile fibers or the application of an oiling technique to blankets only, is unlikely to reduce cross-infection. I also would like to point out that where they made very extensive studies of this in England, it was found that if an individual is a carrier, say with one of these 80/81 strains which you can find very frequently not only in the throat and nose, but carriers also have them on their hands, and on their perineums, one will find them in the stool, on their bodies, and in almost any place from which you take a culture, and so these people are highly contaminated people. Now to go a step further with the environmental aspect of it. If you have an outbreak in a ward with 80/81 strains, if you culture the bedside tables, the water carafes, the floors, the ceilings, the walls, you will isolate these resistant strains of staphylococci from all of these areas. So it just points up the fact that when you have an epidemic of this type of staphylococcal infection in an area that your whole environment and almost all the people in it are contaminated with staphylococci. Well, now we must go on with the question period. Dr. Rogers, will you read the first question please.

DR. ROGERS: I have the following question: "What dose of tetracycline do you use prophylactically in patients with chronic emphysema?" We have varied our prophylactic program, but in general we have used a half gram to a gram a day, and frequently we have done this for three days to four days out of the seven when using the drug prophylactically. There is a second part to this Dr. Long, "How do you consider the use of antibiotics prophylactically in agranulocytosis and leukemia?" Again, I feel as I do about other situations where patients are at hazard from all types of infections. It just does not work. Antibiotics merely select the type of infection that patients are going to get in this situation. They don't get pneumococcal or streptococcal infections, they get staphylococcal or pseudomonas infections.

We have not really reduced immensely the total load of human infections by having antimicrobial drugs. While we have definitely reduced the types of infections from which patients can die, we have not rendered them free of infection. They now develop infections that are due to organisms against which we do not have effective drugs. In virtually all situations of unusual host susceptibility, prophylaxis has been found wanting. This contrasts the situation that Dr. Austrian mentioned where one is attempting to prevent a very specific infection in a very specific situation; as in rheumatic fever; as in the patient who might get meningococcal meningitis; or in Shigella dysentery.

DR. LONG: Dr. Austrian will you take up your first question?

DR. AUSTRIAN: "How can one tell at a bedside examination whether he is dealing with a virus infection or with a secondary infection?" That question covers a lot of ground. If one were to confine it to disease of the respiratory tract, one would be influenced by the nature and character of the secretions of the respiratory tract, either upper or lower, especially with regard to their gross and microscopic appearance. In most viral infections of the lower respiratory tract, the physical findings tend to be somewhat different from those of frank bacterial infections, but they may overlap sufficiently to prevent one from making a differential diagnosis with certainty. One has to use all the aids at his command insofar as possible: history, physical examination and laboratory findings, to make these distinctions, and even then he is not always correct in his initial impression. I think it is important to decide, when one is confronted with a therapeutic problem, whether the treatment is for the doctor or for the patient. Very often medicine is given to protect the physician from criticism. Sometimes the situation is sufficiently grave to make this desirable for all concerned. In other instances, the treatment is directed to a specific need of the patient, and I always try to answer the question when I give any medicine to anyone. "Is the treatment primarily for the patient, or is it for myself, or is it for both of us?" And, I think this question is one which confronts anyone who is practicing medicine.

DR. LONG: Well, of course, I have always said that I believe that there are only two medicines in the Pharmacopeia which I would take. One used to be aspirin, and I won't take that anymore because I am afraid of hemorrhage from my stomach, so I am reduced to Spiritus frumenti. Dr. Rogers will you procede to the next question.

DR. ROGERS: I have an interesting one here —I might answer the second part of it first. "Do I use prophylaxis in comatose patients?" The answer is no, I do not. There is a rather elegant stu[illegible]y by Bob Petersdorf and a group from Yale in comatose patients indicating that not only do they not have less infections, but rather they have somewhat more bacterial infections when prophylaxis is used. There is one other area that's asked about and that is: "Do you use prophylactic antibiotics in acute glomerular nephritis?" As you know, there is good evidence to suggest that nephritis follow certain specific streptococcal infections. I treat patients with acute glomerular nephritis on the assumption that they have an acute streptococcal infection when I get them. I still am personally undecided as to whether they should subsequently receive prolonged prophylaxis. I think this is still an area of question. The argument has been raised that the patient who develops acute glomerular nephritis which follows a rather specific streptococcal infection like type 12, has the best protection in the world against re-developing a nephrogenic streptococcal infection. This is in contrast to the rheumatic who develops a relapse after twenty to fifty percent of *any* type of streptococcal infection. Dr. Rammelkampp and some of the group who have done considerable work in this area have suggested that patients with acute nephritis do not need prophylaxis. I realize that I feel uncertain about it for this reason, and I would now apply my remarks to the subacute or chronic nephritis, seem to these patients develop relapses of their disease following other types of infection, not just type

specific streptococcal infection. I have had the feeling, I might reduce the hazards of chronic glomerular nephritis by prophylaxis. But I feel quite uncertain about it.

DR. LONG: Dr. Austrian would you take up your last question please.

DR. AUSTRIAN: "What are the advantages and disadvantages of prophylactic antibiotics given for patients who are on high dosages of steroid for long periods of time?" Well, I think we are confronted here with the same question in a different frame of reference. It is my thought that, if prophylaxis is directed against a specific infection, it has a reasonable chance of being successful but, on the other hand, if it is designed to prevent all infections, in the long run it is likely to fail. "Would you give prophylactic antibiotics for this type of patient in the case of a staphylococcal epidemic involving the skin ward of a hospital?" I assume the question concerns a dermatologic patient who is receiving steroids. In this instance, if one knew the sensitivity of the epidemic strain to antibacterial drugs and could show that an individual harbored it, one would give the antibacterial agent which would give reasonable promise of eradicating that particular strain of staphylococcus. Probably the wisest thing to do would be to remove the individual from the infected environment as promptly as possible, and this measure, I think, is more likely to be of value than anything one can do in the way of administering medicine.

DR. LONG: There is one final question that I reserved for myself, because it's in two parts. "Please discuss dosage schedules—(a) venereal prophylaxis." Well, if I had the lack of good sense to misbehave and was worried the next morning about what might result from my misbehavior, I would do the following. I would have one of my friends inject into my right and left buttock 300,000 units of penicillin, aqueous, crystalline penicillin, 300,000 units of procaine penicillin, and 600,000 units of benzathine penicillin, and as soon as that was in my buttocks, and then I would stop worrying. I know that will work! "What would be your dosage schedule in (b) pneumococcal pneumonia?" Dr. Austrian, how would you treat pneumococcal pneumonia?

DR. AUSTRIAN: In the absence of extrapulmonary localization of the organism, very small doses are required. Conventional therapy today is usually 300,000 units of aqueous penicillin or procaine penicillin administered intramuscularly every twelve hours.

DR. LONG: Dr. Rogers, "What would be your dosage schedule in staphylococcal pneumonia?"

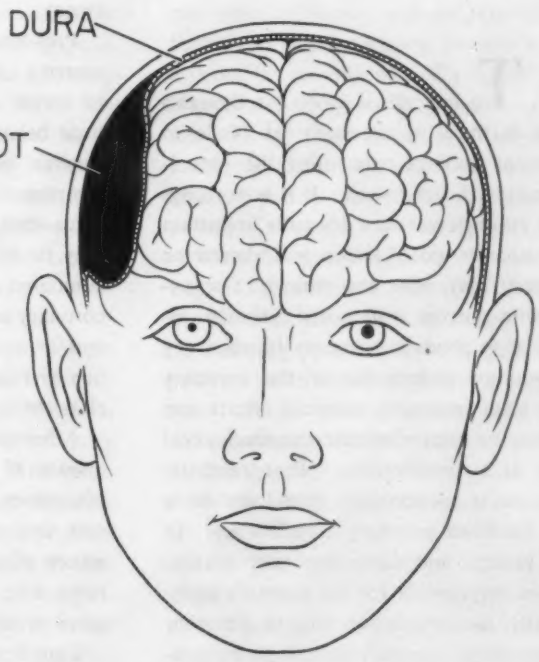
DR. ROGERS: Well, here we have a very different problem, because it depends so much on the sensitivity of the organism. Given a penicillin sensitive strain as we had, for example, during the recent influenza epidemic, I am inclined to use big doses of penicillin, not because I am convinced that they are needed, but because I don't know any better. I believe somewhere between 2.4 and six million units of penicillin a day is perfectly appropriate treatment for penicillin—sensitive staphylococcal pneumonia. For broadly drug resistant staphylococcal pneumonia arising within hospitals, I think there is no formula which can be given for treatment. I think it depends completely on the sensitivity of the organism, and I think it is perhaps worth pointing out that no treatment which has been uniformly satisfactory.

DR. LONG: Dr. Austrian, since we are closing, what about Friedländer's pneumonia? How would you treat that?

DR. AUSTRIAN: Here again the problem is very similar to that of staphylococcal pneumonia, in that we deal with an organism which may develop resistance to quite a number of drugs which are of potential therapeutic efficacy. We start all of our patients who are suspected of having Friedländer's pneumonia on a combination of streptomycin and chloramphenicol. We determine drug sensitivities as rapidly as possible after the isolation of the organism, and modify therapy as necessary in the light of these results. It's very important when you have sick patients to let the laboratory know that they are ill and that you want the sensitivities in a hurry. One of the things

that I think militates against successful treatment of many serious infections is the failure of liaison between the laboratory and the physician. A specimen coming to the laboratory is a specimen. There is nothing about a specimen that may convey the seriously ill state of the patient. Only if the physician "breathes down the neck of the laboratory worker," can he get in many instances the information needed promptly for the benefit of the patient. If he waits until something happens from the other end of the physician-laboratory axis, the die may be cast before he ever gets the information that he needs.

DR. LONG: The final part of this question. "Would, for example, 300,000 units of penicillin daily give same results as one million units of penicillin, or tetracycline 250 milligrams q. 6 hours give the same results as q.8 hours?" In respect to the first part of that question, I can't answer it categorically because I don't know what disease is being talked about. Obviously, with a lot of patients having pneumonia, 300,000 units of penicillin daily might give you the same results as a million, but I certainly wouldn't want to say that it always would, because the higher your level of penicillin the more effective it is liable to be against organisms which are not resistant to it. Now the same would be true of tetracycline, although there the difference between six and eight hours is not as great as between 300,000 units of penicillin and a million units. Dr. Rogers, I want to thank you for coming to the Academy this afternoon, and Dr. Austrian, I also want to thank you.



CLINI-CLIPPING

Extradural Hemorrhage

CURRENT STATUS OF SURGERY FOR . . .

CORONARY INSUFFICIENCY

CHURCH E. MURDOCK, Jr., M.D.
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In former years, the evaluation of a patient with coronary insufficiency was directed toward establishing limits of individual disability and rendering some estimate of prognosis. Therapy was more or less established and easily provided. Thus, the advent of surgical procedures designed to aid the coronary cripple has led to considerable consternation on the part of forward thinking physicians throughout the world. It is the purpose of this manuscript to present one surgeon's viewpoint in this regard.

To logically develop the thoughts to be put forth, it is necessary to allude to certain recent findings concerning the pathology of coronary heart disease. It is now recognized that etiologic variants are quite important as their separate peculiarities will determine what surgery may offer the patient. For example, luetic aortitis with aortic valvular insufficiency may produce coronary insufficiency entirely without endarteritis of the coronary ostia. In such instances, surgical efforts can often reduce or even eliminate the mechanical origin of this insufficiency. Post-traumatic heart disease is increasingly prominant as a cause of *localized* coronary insufficiency. In some age groups, anomalous coronary circulation may be responsible for the patient's problem. Finally, the established king of coronary lesions, coronary atherosclerosis, is to be considered.

Anomalies and inflammatory lesions are so variable in their behavior that each patient must be individualized in determining whether a specific surgical procedure will be warranted. These conditions will be dismissed as beyond the scope of this discussion. It remains then to examine more closely the nature of post-traumatic and atherosclerotic coronary insufficiency.

Post-traumatic heart disease may result from scarring of large areas of the myocardium due to severe contusion. In this instance, the patient behaves as anyone having chronic myocarditis not necessarily exhibiting signs or symptoms of coronary insufficiency *per se*. Thus standard therapeutic regimes are all that may be offered. Another traumatic lesion encountered is one in which direct injury to a coronary artery may initiate a local endarteritis and/or occlusion subsequently progressive and finally calcific becoming manifest at last as classical angina pectoris.

Atherosclerosis is now understood to be a disease of segmental nature. That is to say, oftentimes a relatively normal artery will present one or two short or long segments of severe atherogenic disturbance. This situation holds true for the coronary arteries as well as other areas of the vascular tree.

Considering our coronary insufficiency to be of a chronic progressive nature, what is the course of events that may determine the pa-

tient's fate? It is an established fact that collateral arterial circulation is stimulated by occlusion of major channels. For this collateral to develop protectively, the occlusive process must be *slowly* progressive. We have all seen individuals with mild to moderately severe angina who after many years unaccountably are freed from the bonds of nitroglycerin. Lying at either end of this happy medium are those in "perfect" health who develop a sudden coronary occlusion with death and those whose disease progresses at irregular rates after producing multiple sublethal but finally crippling or fatal myocardial infarcts.

Since many hearts at postmortem can be shown to have suffered sub-clinical and sometimes extensive infarctions, we may well ask why people succumb to coronary occlusion. The monumental work of Dr. Claude S. Beck[1] has provided, in the author's opinion, the only logical explanation to date. The work of this pioneer cardiac surgeon indicates that death in coronary disease results from ventricular fibrillation which in turn is induced by differences in electrical potential generated by varied areas of the myocardium. These reactions depend primarily on pH differentials which develop between "pink" and "blue" myocardium. Because even a small amount of collateral blood supply may keep these phenomenon within a tolerable range, one must conclude that even a few drops of blood at the critical time may protect the patient's life. This is the critical premise on which the majority of surgical procedures rest.[2]

From these basic pathologic and physiologic principals, two schools of surgical endeavor have come into being. The first surgical efforts were all directed toward augmenting coronary circulation in an indirect manner. The more familiar of these being the various abrasive procedures with addition of irritants to produce pericardial granulations with their attendant capillary hyperplasia. Other indirect procedures include transplantation of systemic arteries into the myocardium, partial ligation of the coronary sinus (to afford elevated venous pressure and enhance oxygen extraction in the myocardial circuit), ligation of the internal mammary arteries in hopes of shunting more blood through the visceral pericardium, application of lung, spleen and omentum to the abraided myocardium and finally creation of ventriculo-myocardial shunts with prothestic buttons, reminiscent of the Murphy button employed for ascities. The most recent, indirect effort has been the production of a left atrial to pulmonary artery trunk anastomosis allowing a veno-arterial shunt.[3] This procedure presumes to enhance collateral by virtue of a lowered oxygen tension in the coronary arterial bed. Since such arterial desaturation is known to encourage coronary dilatation as such, the procedure would seem to offer some merit. Most indirect procedures carry an acceptable surgical mortality (2-5 percent).

The second more recent surgical school attempts to assault the coronary arterial lesion directly by employing the heart-lung machine and a technique of endarterectomy. This approach, necessarily new, is poorly evaluated as yet. Unfortunately the segmental occlusions are often multiple and inaccessible and so formidable a procedure is fraught with an unacceptable surgical mortality at this time. If one fails to remove *all* obstructions, the stage may be set for ventricular fibrillation at an early date. Perhaps such an attack will be ideally suited to localized post-traumatic coronary disease.

With the foregoing facts in mind, one can begin to formulate a plan currently acceptable for choosing candidates for surgical alleviation of coronary insufficiency. For the individual with no premonitory angina and a sudden fatal heart attack, nothing can be offered beyond increased usage of the electrocardiograph as a screening agent in all individuals. Once ischemia is detected such a patient could then be categorized.

The individual with a seemingly static angina with little or no limitation of activity must be carefully evaluated, in order to definitely establish the diagnosis of coronary insufficiency. If this diagnosis is definite, surgery should be advised, for it is these early, rela-

tively mild cases that greatest benefit may be achieved.

Those individuals with severe intractable angina with marked ischemic changes evident on the electrocardiogram and perhaps having had one or more myocardial infarctions are urgent problems. These people are suffering from a severe and relatively fast paced progressive disease that will surely kill them. At the same time, one must be prepared to accept a surgical mortality in the range of ten percent. It is felt that the threat to life by the disease process is so great that such a risk is warranted. However, these patients must be carefully individualized.

Contraindications to surgery are those applicable in a general way to all major surgical procedures. Severe congestive heart failure precludes successful outcome. No patient should be operated within six months of his most recent myocardial infarction.

Granted a surgical candidate, the choice of procedures becomes of paramount importance. The author favors two procedures. The procedure of choice would seem to be the Beck procedure, as it has best stood the practical test of benefit for the greatest number of patients with an acceptable surgical mortality This is a combined procedure employing epicardial abrasion, installation within the pericardial sac of powdered asbestos and partial ligation of the coronary sinus. If possible, a pericardial fat graft is placed over the myocardium as a final maneuver.

While many operations might be considered as second choice, the production of a left atrial to pulmonary arterial trunk communication is very appealing. In those patients who offer an undesirably grave surgical risk, a left thoracotomy and active cardiac manipulation as required in most other procedures can be avoided. This "shunt" can be accomplished with the patient supine and employing a median sternotomy incision. The structures to be anastomosed are in immediate proximity and neither pleural space is entered. While the operation has not proven itself in large numbers of cases as has the Beck operation, it would seem to be an excellent alternate procedure.

No one can offer the coronary patient a "cure." However, excellent palliation at low risk can be offered many of these people through a properly selected surgical operation.

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1720 Spring Hill Avenue



WHAT'S THE DOCTOR'S NAME

Identify this famous physician from clues in the brief biography.

PAGE 71a

Serotonin and Brain Functions

Serotonin was independently discovered in Europe by Erspamer, and by Page and his associates in the U.S. Found widespread in nature, from the venom of the scorpion, and the ganglion of the clam to mammalian gut, and even in the human brain, it is little wonder that serotonin aroused interest.

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Considerable interest has developed in recent years in a simple hormonal substance, 5-hydroxytryptamine, or as it is popularly called, serotonin. Its chemical identification was first reported only within the past decade. Within a few years, it rapidly captured the scientific imagination, and a formidable bibliography developed around it. Its simple chemical structure, (Figure I) containing the indole nucleus, relates it to a wide variety of potent substances including plant growth hormones, nicotinic acid, and a number of hallucinogenic drugs. Certain rare human diseases such as malignant carcinoid, nontropical sprue, and phenylketonuria, involve disorders in serotonin metabolism.

Serotonin is obviously a most remarkable substance. Perhaps the most remarkable thing of all is that, after a great deal of research, no one knows exactly what it does. Its chemical structure as well as its distribution in nature and in the human body, suggest some very fundamental actions; yet, for the most part, its functions remain obscure.

We will not have space to review the extensive and diverse studies which have been reported. It is necessary, however, to mention that many studies have been based on the observation that serotonin usually causes contraction of smooth muscle such as gut or blood vessels. This led, of course, to speculation about a role for serotonin in the regulation of gut motility or blood vessel tonus. Unfortunately, neither of these logical possibilities has been fully proven by experimental work. A by-product of such studies has partially led, however, into much more exciting speculations regarding a role for serotonin in mental functioning.

In 1953, Gaddum[1] in England and Woolley and Shaw[2] in the United States observed that serotonin will cause the contraction of smooth muscle such as rat uterus suspended in Ringer's solution, and that the hallucinogen, lysergic

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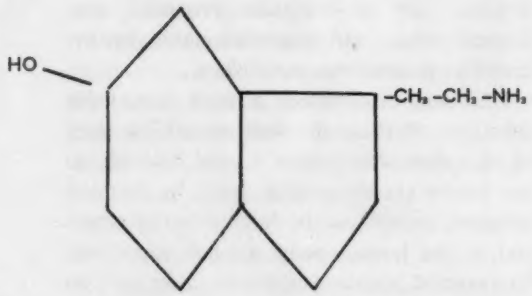


FIGURE I Serotonin.

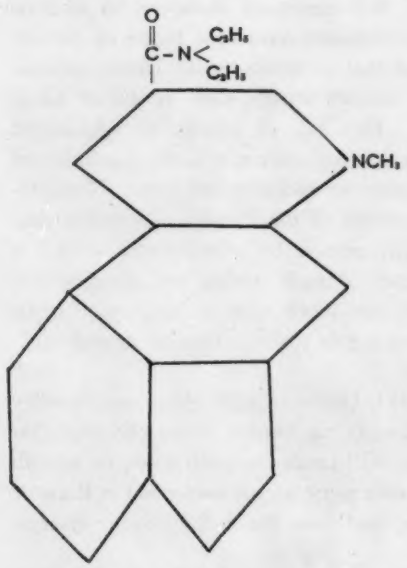


FIGURE II D-Lysergic Acid Diethylamide (LSD-25).

acid diethylamide (LSD-25) (Figure II) will antagonize this effect. A similar antagonism between the two substances was also observed on other tissues as well. This empirical finding immediately led Woolley to speculate about what may go on in the brain. LSD-25 is an extremely potent hallucinogenic substance, which produces profound psychophysiological effects in humans in only microgram doses. The psychological effects which may be produced have been likened (though not with full accuracy) to schizophrenia by some observers. The mechanisms of central action of such a drug would, of course, be of great interest to those interested in the organic substrate of mind. Woolley proposed the novel and stimulating idea that LSD-25 acts by somehow interfering with the normal functions of serotonin in the brain. The simplicity of the idea as well as its potential significance caused it to find wide favor. A corollary to this idea which also became very popular was Woolley's suggestion that schizophrenia is caused by a disorder in cerebral serotonin metabolism.

Woolley's thinking was probably even more daring than he realized. It is a big leap from the test tube to the brain. At the time Woolley proposed his idea, virtually nothing was known of the normal or pathological actions of serotonin in the brain. Even today we know very little more. We are not yet in a position to say whether Woolley was right or wrong in his ideas or whether he was even partially right. A great deal of work has nevertheless been done in this area in recent years, some of it stimulated by Woolley's findings.

It would be impossible to review the many articles which have appeared dealing with this aspect of serotonin. A few findings which are relevant to our subject may suffice.

Serotonin is not uniformly distributed throughout the mammalian brain, but is found chiefly in the phylogenetically older parts of the brain. The highest concentrations are reached in the rhinencephalon or "limbic system," particularly in such regions as the hypothalamus, amygdala, and septal area.[3] This distribution appears highly significant, since

there is growing evidence to indicate that this primitive system participates in some very fundamental aspects of behavior, especially those aspects involving emotion.

Although this distribution is highly suggestive, we are still in the dark as to what it means. Perhaps the most obvious deduction one can make is that serotonin functions as a "neurohumor," affecting synaptic transmission in the limbic system, as acetylcholine does in some regions. Indeed serotonin does seem to function as a neurohumor — in the visceral ganglion regulating the heartbeat of the clam! The neurohumoral hypothesis is unproven as yet in humans, however, although some of the evidence is suggestive. It has been shown that serotonin causes inhibition of transcallosal synaptic transmission in the cat—as do certain other substances, such as LSD-25, mescaline and norepinephrine. This finding, though of interest, is difficult to interpret, and actually sheds little light on the question. Of some interest is the finding of Bessman and Borges[4] that administration of a serotonin precursor to patients in hepatic coma causes the EEG to revert towards a normal pattern. This finding may turn out to have considerable significance, but more evidence is needed before it can be fully interpreted.

Other findings are not too encouraging for Woolley's theory of LSD-serotonin interaction in the brain. It has been shown, for example, that substances, other than LSD-25 which lack its potency as a hallucinogen, may also antagonize serotonin *in vitro*. Even chlorpromazine, which is a therapeutic drug is an antiserotonin. Gaddum[5] has introduced serotonin directly into the brain ventricular system of cats and observed no effects on the response to LSD.

Other studies have been reported recently, in which brain serotonin levels were experimentally altered in humans, with no observable effects on the response to LSD-25[6].

None of the above findings are sufficient to completely refute Woolley's hypothesis, but they obviously cast much doubt on it. It is safe to assume that we are dealing with phenomena more complex than our present conceptual models allow.

A few studies have been reported in which cerebral serotonin levels in schizophrenic patients have been experimentally elevated by parenteral administration of the serotonin precursor, 5-hydroxytryptophane.[7, 8] Findings thus far have been inconclusive, but further studies are in progress in several laboratories, including our own.

It would not do to discuss serotonin without at least briefly considering several drugs with effects on cerebral serotonin metabolism which are used to treat emotional disturbances. Each has been alleged to exert its therapeutic effects through its actions on serotonin. The first of these is reserpine, a potent tranquilizing agent, which releases bound serotonin, and depletes serotonin stores in the body. It has been suggested by Brodie[9] that the tranquilizing effects of reserpine are due to increased levels of free serotonin, rather than to the depletion of the bound form *per se*.

Another group of drugs which are widely used for mental patients are the monoamine oxidase inhibitors. As the name suggests, these drugs inhibit the action of the enzyme monoamine oxidase, which breaks down free serotonin. Increased levels of serotonin thus result.

These drugs are used extensively for the treatment of depressive reactions and have been referred to as "psychic energizers." The mental effects have been attributed to increased levels of serotonin in the brain.

Unfortunately, nature is rarely so simple as we would like to make it. Both reserpine, and the monoamine oxidase inhibitors influence norepinephrine metabolism in the same way as they affect serotonin.[10,11] Norepinephrine, which is closely related chemically to epinephrine, is well known for its pressor effects on peripheral circulation. It is also found in the brain but, as in the case of serotonin, its cerebral functions are obscure. Obviously, it would be rash to unqualifiedly ascribe the effects of these drugs to their influence on serotonin metabolism. This

hypothesis may turn out to be correct, but in the meanwhile, we cannot exclude the possibilities that their effects are mediated through changes in norepinephrine levels, or perhaps in some as yet unknown chemical changes.

Conclusion

With many laboratories still investigating serotonin intensively, we may confidently await elucidation of its functions. The practical implications of such discoveries may turn out to be considerable. But far transcending any immediate practical significance, serotonin promises to emerge as another fundamental link between the widest variety of biological processes throughout the plant and animal kingdoms.

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Psychiatric Institute



Psychological management of the pre-school child involved in an auto accident.

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Auto Accidents and the Pre-school Child

An increasingly common occurrence in general practice is the examination and treatment of children who have been involved in automobile accidents, either as passengers or having been hit directly. In addition to the organic injuries, a general group of symptoms are frequently seen which fall diagnostically into the category of the "traumatic" or acute anxiety state. These symptoms include specific fears of cars or recurrent accidents, more general fears of bodily injury, nightmares and insomnia, babyishness and clinging to the mother, increased fear of separation from the parents and of sleeping alone or in the dark, disturbances in eating, and transient loss of bladder and sometimes bowel controls if these have been previously established. It is generally recognized that these symptoms last for a variable period of time and gradually clear in most instances.

Several factors appear to influence the duration and extent of this anxiety state. One appears to be the age of the child. The younger child has a less integrated personality structure and therefore less ability to organize and assimilate the sudden and overwhelming stimuli involved in this type of traumatic event. Another factor is, of course, the extent of the accident and possible injuries to the child and others. A third factor is the previous state of the child's personality. A child who is having much difficulty will be less capable of handling fresh emotionally upsetting events.

What can the practitioner do to influence favorably the course of this disturbance? In order to understand this, one must understand the normal way in which overwhelmingly traumatic events are mastered by the personality. Adults repeat traumatic events over and over in fantasy. During the course of the repetitions, the experience is broken up into small increments of affect which are gradually assimilated. Normally, the child does the same thing in play and in verbalization. That is, during the course of repeated playing out and verbalization of the event, the child lives out the incident and assimilates the disturbing feelings associated with the accident. In play, the child can reverse the situation, making himself active rather than passive and the master of, rather than at the mercy of, the external events. If he wishes, he may also change the outcome, so that those who were injured may be uninjured, and others towards whom he might feel more angry may be injured instead. Verbalization, i.e., putting it into words is another manner of controlling the frightening feeling. Nothing is "frightening beyond words" once it is put into words. Reassurance is also gained when hearing the

doctor and parent speak of the event, since they are not so frightened by it either.

Temporarily, this mechanism may not be sufficient to handle the stress. Regression and anxiety symptoms are called into play. If the event is not "played out" and assimilated, it remains an unconscious nucleus for possible later personality difficulty.

Before the physician enters into the situation, his awareness of the regressive and anxiety symptoms is most important. Careful following gives the child the opportunity to institute reparative processes spontaneously and thus gain strength in handling the situation himself. However, if symptoms continue, the examining physician can help the situation decisively by encouraging the parent to discuss the event with the child in fullest detail, and to allow and encourage the child to repeat the situation in play. The doctor should also discuss the event realistically with the child during the course of his examination. This type of reassurance of the parent to direct verbalization of the event, rather than allowing the parent to urge the child to "forget it," then allows for more rapid expression and assimilation of the disturbing and frightening feelings attached to it.

Case History

A five-year-old girl was seen in consultation four months following an automobile accident. The child was sitting in the front seat between an older brother and her aunt. In the accident, the child sustained a bruise on her left hip, minor bruises and a nose bleed. She was examined at a local hospital and discharged. The mother related that the child's injuries quickly healed. However, anxiety symptoms continued. Most disturbing was a marked fear whenever she had to ride in a car. At those times, she was constantly guarding against being thrown about, frequently cautioning the parents to be more careful, drive slower, etc. She became openly anxious about the fate of the parents whenever they were in the car. There were prolonged periods of marked anxiety and kneading of her fingers. She returned to sucking her thumb when asleep, a pattern of behavior which she had relinquished at the age of three. Following the accident, she had marked decrease in appetite and alternating constipation and diarrhea. She was quite clinging and dependent upon her mother and fearful of being alone. Although she continued to go to nursery school, she was difficult to leave, always asking mother to stay with her.

A review of the child's past history was not unusual, except for three deaths in the family during the preceding two years. First an aunt and an uncle of the mother's and then the paternal grandfather, of whom the child was very fond, had died within a few months. Following the accident, the girl had mentioned some connection of the grandfather's death with the accident, but the mother related that she said this was silly and told her to "forget it."

Examination revealed a very bright and verbally adept five-year-old who related to the examiner warmly after a few moments. She talked about the accident, felt that she had been doing her best to overcome her fears, as she had been urged to do. While playing out the accident in the interview, she related a very frightening dream in which she and the father were hurt together.

It was suggested to the child that it might help her to discuss her fears with her parents. The parents were encouraged to allow the child to play out the accident as had been done during the course of the interview. They were also urged to allow her to express herself quite freely about any ideas related to the accident and to replace any misconceptions with more realistic considerations. A follow-up two months later revealed that the child had spoken about the accident two or three more times with the parents and had shown what was described as remarkable and complete relief of symptoms.

Summary

Automobile accidents, like other major traumatic events, induce states of anxiety in children because of their inability to assimilate rapidly the overwhelming stimuli. The family physician can help bring this condition to a more rapid and satisfactory solution by encouraging both parent and child to verbalize and play out fully the traumatic event.

D 129 Presidential Apartments

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ABDOMINAL AORTIC ANEURYSM IN NEW ORLEANS

Results of a study of the autopsy records of six metropolitan New Orleans hospitals and of the Orleans Parish coroner's office for the incidence of abdominal aortic aneurysm were as follows: In 26,554 autopsies, only 158 aneurysms of the abdominal aorta were found, an overall incidence of 0.60%. Of the 158 aneurysms, 62.6% were intact at the time of autopsy, 24.7% had ruptured, 3.8% had dissected, and in 8.9% of the cases surgical removal of the abdominal aneurysm resulted in postoperative deaths.

During the last three years of this study (period of surgical intervention) 60% of the aneurysms were intact at the time of autopsy, 13% had ruptured, and in 27% of the cases abdominal aneurysm was removed, resulting in postoperative death.

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J.A.M.A. (1960) Vol. 172, No. 18, Pp. 2011-2013.

A "PERFECT WEEK" OF NUTRITION

Monday Breakfast Through

Today's housewife must combine the knowledge of a nutritionist with that of a cook. For it is no longer enough for her simply to serve *appetizing* meals; she will be doing her family a disservice if they are not also *balanced* meals.

Any good cook can make food taste good, and any nutritionist can make it nourishing. To do both is the mark of the exceptional cook; and this is achieved largely by the intelligent use of two basic components: variety and nutrients.

In organizing any menu, the basic point to keep in mind is that there is no one food—except for mother's milk in feeding infants—that contains all the essential nutrients in the correct proportions. The art of the cook-nutritionist is to "build-in" these proportions in the day-to-day menu.

This article offers a sample week's menu of the exceptional cook —21 meals that are appetizing both individually and as a group, and that contain in just the right proportions all the fuels the human body needs to operate at top efficiency.

These fuels are found in six main food combinations: carbohydrates, fats, proteins, vitamins, minerals and water. Each of these nutrients performs body-building-and-operating functions either as a separate nutrient entity or—to oversimplify it a bit—working with or on each other.

The 21 menus presented here were prepared for The Melamine Council by the Harvard School of Public Health, at the request of the Nutrition Foundation. Its purpose is to show you the types of food that readily furnish a diet meeting all *known nutrient requirements*.

Served in average-sized portions, these menus would supply about 2,200 calories a day—slightly above the desired intake for women, slightly below that for men. The individual should always adjust the total caloric intake to accomplish and maintain an ideal body weight. The two chief variables affecting this caloric requirement, in addition to body size, are age and physical work.

Sunday Dinner

MONDAY

BREAKFAST

Orange Juice Cereal Milk
Toast Butter, marmalade
Coffee, tea, or milk

LUNCH OR SUPPER

Liverwurst, swiss cheese sandwich on rye bread
Cole slaw
Sliced peaches
Milk

DINNER

Grape juice
Broiled chopped sirloin steak
Baked potato with sour cream and chives
Buttered carrots Celery hearts
Butterscotch ice cream sundae
Coffee, tea or milk

TUESDAY

BREAKFAST

Stewed prunes and apricots
Poached egg on toast Bacon
Coffee, tea, or milk

LUNCH OR SUPPER

Beef stew
Pear half with cottage cheese on lettuce leaf
Hot rolls Butter
Baked custard
Coffee, tea, or milk

DINNER

Roast Chicken
Cornbread dressing Whipped potatoes Peas
Endive, lettuce, avocado, grapefruit salad
with oil and vinegar dressing
Dinner rolls Butter
Frozen melon balls
Coffee, tea, or milk

CALORIC VALUES OF COMMON SNACKS

(Note that some are very low in calories)

SNACK	CALORIES
Dish of Ice Cream	205
Chocolate Sundae	375
Vanilla Milk Shake	315
Chocolate Malted Milk with Ice Cream	485
Swiss Cheese Sandwich with butter or mayonnaise	365
Ham Sandwich with butter or mayonnaise and mustard	340
Whole milk—8 oz. glass	165
Skim milk—8 oz. glass	85
Soft drink—6 oz. glass	78
Beer—12 ozs.	170
Martinis (2—each 2 oz. of gin)	420
Iced Tea with 1 tsp. sugar	16
Iced Tea with lemon, no sugar	0
Iced coffee with 1 tsp. sugar	16
Iced coffee—black	0
Apple Pie	380
Apple Pie with ice cream	465
Apple Pie with cheese	435
Angel Cake with frosting	210
Angel Cake with no frosting	145
Plain cake—no frosting	230
Peanuts—2 "handfuls" (36 peanuts)	170
Orange—1 average size	70
Apple—1 average size	80
Pear—1 average size	65
Peach—1 average size	45
Crackers—2 saltines	30
Crackers—2 Graham	56

WEDNESDAY

BREAKFAST

Tomato juice Cereal Milk
Raisin Toast
Coffee, tea, or milk

LUNCH OR SUPPER

Spanish omelet Asparagus tips
Tossed green salad with garlic dressing
French bread Butter
Orange ambrosia
Milk

DINNER

Pork chops
Baked sweet potatoes
French-styled green beans seasoned with
chopped green onion, bacon, and thyme
Pineapple slices with cream cheese
garnish in lettuce cup
Chocolate fudge cake
Coffee, tea, or milk

THURSDAY

BREAKFAST

Grapefruit juice Soft cooked eggs
Toasted English muffins
Butter, Orange marmalade
Coffee, tea, or milk

LUNCH OR SUPPER

Cheeseburger on sesame seed roll
Dill pickles
Molded lemon salad with cabbage and green
pepper garnished with mayonnaise
Fresh fruit cup
Milk

DINNER

Broiled steak
French fried potatoes Buttered cauliflower
Sliced tomatoes with French Dressing
Hot rolls Butter
Apple pie
Coffee, tea, or milk

Prepared by the Harvard School of Public Health and published in booklet form by the Melamine Council. Reprinted here with permission.

The Melamine Council, founded in February, 1957, by the melamine plastic dinnerware industry of the United States and Canada, is an educational organization disseminating information on developments and trends of interest to the merchandising and volume feeding trades, the home economics and educational professions and the general public.

FRIDAY

BREAKFAST

Banana Cereal Milk
Cinnamon toast
Coffee, tea, or milk

LUNCH OR SUPPER

Fruit salad with cottage cheese
Pecan rolls Butter
Tapioca pudding
Coffee, tea, or milk

DINNER

Shrimp creole
Steamed rice Green beans
Tossed salad with Italian dressing
Hard rolls Butter
Broiled grapefruit half
Coffee, tea, or milk

SATURDAY

BREAKFAST

Orange juice
Poached egg on toast Bacon
Coffee, tea, or milk

LUNCH OR SUPPER

Frankfurters
Baked beans Chef salad
Boston brown bread Butter
Apricots
Milk

DINNER

Braised liver and bacon smothered in onions
Mashed potatoes Buttered peas
Carrot sticks
French bread Butter
Ice cream
Coffee, tea, or milk

SUNDAY

BREAKFAST

Grapefruit half
Scrambled eggs Grilled ham
Coffee roll
Coffee, tea, or milk

LUNCH OR SUPPER

Open-face grilled cheese and tomato sandwich
Olives
Fruit jello with whipped cream
Milk

DINNER

Consomme
Roast prime rib of beef au jus
Yorkshire pudding
Frozen or fresh broccoli
Chef salad with roquefort dressing
Angel cake with strawberries
Coffee, tea, or milk

Solo and Group Hypnotherapy

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The present study evolved as a result of treating a group of patients for weight reduction with the use of hypnosis and diet alone. Even with the initial session, it became apparent that patients rarely have a single problem but rather a multiplicity of complaints. No matter what the chief complaint might be, there were usually at least two or three others, related or unrelated to more than one disease process or symptom complex. The patient who sought help for weight reduction might also complain of marked tension, nervousness, apprehension or might also have asked for help because of nailbiting, excessive smoking or headaches. Therefore, when suggestions were given for weight reduction, it was only natural to attempt to alleviate other symptoms or to correct habits of long-standing as well. With successive weekly visits, it soon became apparent that multiple conditions in the same patient could be treated by multiple suggestions with favorable results.

Group therapy was found to have certain distinct advantages over treatment on an individual basis. Patients became interested in each other's problems yet extreme care was taken to assure that no deeply personal information was divulged. Particularly in the treatment for weight reduction, patients were made to feel as though they were contributing to a team effort by informing them not only of the amount of weight each one lost but also by adding the total weight loss of the group and informing them that they, as a team, had been able to lose a certain number of pounds. Each one was found to take a certain amount of pride in the team accomplishment and was found to try harder to be an active and positive contributor to the team result for the next session. Patients developed a friendly association with one another, compared notes and congratulated each other on satisfactory results. When one individual was successful and expressed confidence and enthusiasm for the method, the feeling was decidedly contagious and quickly spread to the others. Group therapy was also advantageous because of the economic factor, since fees could be kept at a minimum, considering the amount of time that was necessary for each session. It was easier to treat ten patients in one hour than to try to give one hour to each of ten patients.

A group consisted of not more than ten in a class. At the first session, new members were briefed on the plan of therapy, were asked for their chief complaints and heard the report of each "old" or returning patient concerning his success or failure during the preceding week. Questions were asked, answers given, and misconceptions clarified. New mem-

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This paper was presented at the Second Annual Scientific Assembly in Chicago, October 9-11, 1959, of the American Society of Clinical Hypnosis and released for publication elsewhere by "The American Journal of Clinical Hypnosis."

bers of the group then watched the old enter hypnosis by signal, and heard the suggestions given. They observed the serious manner in which the class was conducted and appreciated the fact that the session was being held for the medical benefit of the participants. At the conclusion of the session, after members of the "old" group had left, those present for the first time were given the opportunity to ask questions, and were then taught how to enter hypnosis.

In this study of one hundred and seventy patients, eighty were treated on an individual basis. Eleven or seven percent were unable to attain hypnosis at all. Forty or twenty-five percent of those treated either did not return or came only once or twice, an insufficient number of times to draw definite conclusions. Only three of every four patients accepted hypnosis for continued therapy in the treatment of their complaints. Some of those who did not return were known to have shown initial success but for one reason or another gave it up.

Fifty-three patients were treated for weight reduction. The basic plan was one session a week for six weeks, with follow-up sessions once a month for three months. Twenty-two or sixty-three percent were successful in losing satisfactorily, that is, two or more pounds each week. Total weight reductions varied from fifteen to forty pounds. Thirteen or thirty-seven percent were unsuccessful, either did not lose, lost very little, or even gained. Eighteen did not return a sufficient number of times for results to be conclusive. Although it is true that many of those who were unsuccessful were patients who had been through the weight reduction mill and who had run the gamut of every conceivable drug method of losing weight and were failures with all the methods they tried, no excuses are made for them. The impression has been given in recent medical and lay periodicals that almost one hundred percent of patients will lose weight by the use of hypnosis or hypnosis and diet alone. This has not been found to be true in this study.

The group included eighteen chronic nail-biters who had suffered with the habit for from five to thirty years. The great majority were adults from twenty to forty years of age. Each one stopped nailbiting immediately after the initial session and not one has been known to revert to it. To compensate for the prolonged habit, an innocuous substitute was given. It was usually suggested that they suck on a hard candy of low caloric value or a mint but most found it unnecessary. None developed any related habit or showed any evidence of frustration.

Almost equally gratifying results were attained in those patients suffering from all grades of anxiety. Of fifty-seven patients with complaints of nervousness, tension, insomnia, palpitation, breathlessness, sensations of apprehension, fear, rapid pulse, tachycardia and family and personal problems, fifty or eighty-eight percent were relieved successfully after the first hypnotic session. Many required further sessions to maintain and increase the amount of relief but all who were benefited felt better directly after the initial session. Only seven or twelve percent were unsuccessful. It is to be noted that in no instance was it necessary to employ analytical methods in treatment of anyone in a group—only direct and post-hypnotic suggestions were utilized. Since only simple forms of suggestion were used, without any attempt at regression, revivification or other more complicated or analytical methods, it was particularly gratifying to note the results, since in no case did ill effects of any kind develop. These were patients each practitioner sees frequently in his office—a large number of unhappy people who circulate from one physician's office to another, seeking relief from non-organic complaints as vivid, realistic and discomforting to them as though they had the pain or distress of an organic disease. These were people who had had phenobarbital, bromides, meprobamate, promazine and chlorpromazine — who had been completely and adequately tranquilized. Almost all in this group ceased to be dependent upon any sedative or artificial agent. For many, it was a freedom akin to release from addiction.

Sixteen surgical patients were treated in

hospital. These were cared for on an individual basis rather than in a group. The patient was admitted for surgery at least one day prior to the operative procedure. It was the practice to give him the first hypnotic session the day prior to surgery in order to acquaint him with what hypnosis could do for him, advise him of the relief that he might expect, determine the depth of the trance and establish a signal for rapid induction the following day. In eleven patients, no hypnotic was used the night before surgery, no hypnotic or narcotic was used prior to sending the patient to the operating room on the day of the procedure, and in almost every instance, no sedation was necessary postoperatively. Of the sixteen patients, only five required a narcotic postoperatively and only two required more than one injection of Demerol® or morphine. The rapport between the family physician and his patient was greatly enhanced by the initial session in the hospital. The patient felt that his physician was taking a complete and unexpected amount of personal interest in him and his particular problem. It was attention for which he was most grateful and felt was above and beyond the call of duty. He was told that the operation would go well, that the surgeon was capable and what the operative procedure would entail, without relating any gory details. On the morning of operation, the patient was seen in his room, hypnosis induced, and he was accompanied through the corridors into the elevator and into the operating room. He was introduced to the nursing personnel and anesthetist while in the hypnotic trance and was told that he would follow the suggestions of those members of the hospital staff because the requests they made would be for his personal benefit. Suggestions were continued throughout the course of the operation, if the procedure was done under spinal. Regardless of the type of anesthetic used, he was given suggestions that postoperatively he would have no difficulty voiding, moving his bowels, would have no pain at the site of the incision, would require no hypnotics for sleep, no narcotics for pain because he would have no pain and would have no distress from a Levine tube. He was also told that he was not to be alarmed if oxygen had to be given, and that his appetite would be good immediately following surgery if there were no contraindication to this. Patients accepted anesthetics extremely well without apprehension or fighting. Postoperatively they took fluids readily, ate heartily, got out of bed without difficulty, had no headaches or other troublesome symptoms. In each instance, the patient was amazed by the freedom from discomfort or pain and the wonderful way he felt considering the fact that he had undergone a major surgical operation. The following were the procedures, with short comments on salient features.

Total hysterectomy under general anesthesia —one injection of Demerol given immediately postoperatively, although the patient stated that she did not require it. No hypnotics or sedation given. She walked to the bathroom the morning following surgery, sat out of bed a great deal of the time as though it were a most usual day. She stated emphatically that she had no postoperative pain.

Abdominal perineal resection for carcinoma of the sigmoid—two injections of Demerol were given. Otherwise patient used auto-hypnosis for sedation and sleep. She did not complain of discomfort of the Levine tube, or the continuous intravenous infusions for three postoperative days.

Bronchoscopy under local anesthesia—no sedation of any kind ordered or given. Patient taken to the operating room in hypnosis, transferred himself from the stretcher to the operating table. Bronchoscopic examination was done of each main bronchus including the right upper lobe. Bronchial smears and washings were done. Immediately following the procedure, he was brought out of trance and stated that it was not an uncomfortable experience of any great magnitude. He ate breakfast immediately upon return to his room, then demanded lunch and finished that too. He was out of bed immediately with no distress thereafter.

Hemithyroidectomy done under general anesthesia with no sedation or necessity for pain relief at any time. The patient ate a regular diet for dinner the evening after surgery and had bathroom privileges the same day. There was no postoperative pain whatsoever.

Two patients had dilatations and curettages for incomplete abortions done as emergencies. The first was admitted in the early evening. In view of the fact that hypnosis could be induced easily, it was decided to try to dispense with general anesthesia since the anesthetist on call was occupied at another hospital at the time. Another important factor was that the patient had eaten just prior to admission. The patient was left in trance in her room and was told that she would be seen again upstairs. However, by the time she had been transferred to the operating room, she had awakened completely. Without great difficulty, hypnotic trance was reinduced and dilatation and curettage performed with hypnoanesthesia alone. This illustrates the fact that a patient in trance should be accompanied to the operating room by the hypnotherapist. The second patient was taken to the operating room in trance. Dilatation and curettage was performed with hypnoanesthesia alone while an anesthetist stood by in case of need. Both patients were able to eat directly after return to their rooms and neither required any medication or sedation.

Two patients came in for elective local Cesarean section. The first was a thirty-six year old primipara who had a history of removal of a grapefruit-sized fibromyoma of the uterus. The second was a gravida two, repeat section, for cephalopelvic disproportion encountered in the first pregnancy. The routine hypnotic procedure was followed on the day of admission for the primipara. It was found that she was an excellent subject, accepting suggestions quickly and readily. Hypnosis was rapidly reinduced the morning of surgery, and the patient was taken to the operating room in a trance and moved onto the table. Local anesthesia was the sole anesthetizing agent. At one time during the operation, she complained of severe pain and was given Demerol for relief. She was told that she would not recall this fact. Following the injection, she was again most cooperative. Immediately upon the completion of the operation, after the dressing was applied, she was awakened. She moved back to the stretcher unaided. She had liquids immediately, sat up in bed within two hours and ate a regular dinner the same afternoon. The postoperative course was completely uneventful. She received no medication for sleep or pain at any time during her hospital stay. In addition, she had complete amnesia for the short period of discomfort she had experienced.

The second patient was only a fair subject and required sedation. She stated, however, that she had felt much less pain than she expected, was more relaxed, and that the hypnotic experience had been beneficial.

Three patients came in for cholecystectomy. The first asked for relief only once directly following surgery and was given one hundred mgms. of Demerol. Otherwise she had no postoperative pain and felt no discomfort of the Levine tube, or of the continuous intravenous fluids. Two other patients had marked preoperative relief of apprehension and unusually smooth postoperative courses and required much less sedation than would be expected.

Patients who were in hospital for submucous resection and nasal plastic surgery, inguinal hernia, cysts of the breast, and a circumcision in a nine-year-old—all went to the operating room in a trance, required much less sedation than usual, and felt that the use of hypnosis as an adjunct was markedly helpful in their pre- and postoperative care.

An adult male was brought to the office directly after having fallen. He had a marked silver fork deformity with fracture of the distal end of the radius and styloid of the ulna. He accepted the offer of the use of hypnosis and went into trance easily. The fracture was reduced and deformity corrected without anesthesia and without pain to the patient.

A twenty-one-year-old male was admitted

to the hospital one evening with symptoms of short duration. Circumstances made it impossible to employ hypnosis before he was taken to the operating room. He had received Demerol, one hundred mgms., one-half hour prior to leaving his ward bed. While the anesthetist was preparing to administer the spinal anesthetic, hypnotic induction was attempted. During the course of the operation, it was impossible to be certain how much of the patient's sedation was due to Demerol and how much to hypnosis. It was felt that most of the effect was due to the drug. An acute suppurative appendix was found and removed. While the last few sutures were being inserted, the story of the female poet who would dream the most beautiful dreams and write the most exotic poetry at night while deeply asleep was told to the surgeon. It seemed that each morning, however, when she awakened, she was completely disappointed and frustrated because she was unable to remember even one line. She decided that she would thereafter keep a pencil and pad handy upon her night table so that when she dreamed the rapturous words, she would immediately commit them to the writing paper. That very night, the dream she dreamt was more perfect in form, meter and ecstatic beauty than anything she had previously known. She groped for the pad and pencil, then half asleep, half awake, wrote it down. Even during the remainder of the night, subconsciously, she could barely keep from awakening so that these poetic pearls could be relished by her conscious self. As the first rays of light entered her bedroom, she opened her eyes and reached expectantly for the paper. This is what she read:

"Higamos, hogamos,
Men are polygamous.
Hogamis, higamus,
Women monogamous."

This anecdote was amusing but soon forgotten. The following day the patient complained of headache, but of little else. He was allowed out of bed on the third postoperative day but continued to complain of headaches which were thought to be the result of the spinal tap. On the fourth day, when asked concerning his condition, he replied that he felt well except for the constant nagging headache. "Doctor," he said, "there's something churning over and over in my mind that's giving me this headache — something about 'higamis' or 'hogamis.' I don't remember where I heard them, but these two words keep repeating themselves constantly. Can't you give me something else to cure these headaches?"

It was then obvious, of course, that the headaches were not the result of the spinal anesthetic but rather to a failure to properly remove hypnotic suggestions and discussion. He was, therefore, hypnotized again, all suggestions and memory for the story removed, and suffered no further headaches. He left the hospital entirely well.

Although hypnosis is of great value in obstetrics, sufficient time could not be given during daily general practice for the proper induction of the patient, since four to eight sessions or more are frequently necessary for proper preparation of the patient for favorable pain relief. However, whenever possible, patients in labor who were having contractions every five minutes or less frequently, were hypnotized in the labor room for the first time. Twenty such patients were hypnotized and all were materially aided as far as apprehension, nervousness, and pain relief during the first stage of labor. It was usually possible to keep them comfortable without any sedation until dilatation was five to seven centimeters or more when a so-called "saddle block" anesthesia was given. Patients in labor accepted hypnosis most readily, since motivation and desire to be helped were at exceptionally strong levels. Post-hypnotic suggestions were given to the effect that there would be no post-partum discomfort at the site of the episiotomy, that there would be no trouble in voiding, or with bowel movements, that the patient would have a sense of well-being and would enjoy her hospital stay, that there would be no after pains, and that she would require no sedation or hypnotics for sleep. At the same time, sug-

gestions were given that the patient would have no headache following spinal anesthesia. Time was usually not an important factor because of the fact that the attending physician was close to the labor room and spends a good deal of time observing the patient during the progress of labor instead of remaining in the doctor's lounge waiting for the patient to dilate. Time seemed to pass much more quickly because he was devoting himself to inducing and maintaining hypnosis during part of the first stage.

A case of paroxysmal tachycardia in a fifty-seven-year-old female was a dramatic example of an unusual use of hypnosis. This patient had a history of attacks at irregular intervals for thirty years, usually provoked by emotional disturbances. She was seen at home in an acute episode with an apical rate of 160-180 beats per minute after the attack had been in progress for four days. It had been precipitated by an intense argument with her son. She had been given quinidine sulfate, three grains every four hours for one day but developed severe diarrhea. The following day, she was started on digitalis and given a full digitalizing dose in twenty-four hours. This also failed to stop the attack. The patient was hospitalized on the sixth day. Hypnosis was induced at approximately 10:30 P.M. and the suggestion was given that during the night she would develop an amnesia to the incident which caused the onset of the attack (the argument with her son). The trance state was easily induced. When she was visited the following morning, she almost leaped out of bed, eager to state that exactly what had been forecast had occurred. She related that at about 3:00 A.M. while half asleep and half awake, she suddenly forgot what precipitated the attack, she felt her heart "flip over," felt her pulse and found it to be perfectly normal. This patient received no medication from the time of her admission to the hospital at 1 P.M. until her discharge.

A patient was admitted to the hospital suffering from recurring headaches for a period of two months following an automobile accident. Medication for relief was ineffective. X-rays and other studies were found to be negative. Before a trance state was induced, she complained of a severe headache. In trance, she was told that the headache would disappear while the physician counted from one to five. When she awakened, the headache was gone and she complained of none since.

A patient with severe, deforming arthritis of twenty-five years' duration, who was almost completely bedridden, had been receiving capsules containing 400 mgms. of meprobamate, ½ gr. of phenobarbital, 10 grs. of aspirin and ½ gr. of codeine three to four times daily, plus 16 mgms. of Medrol® daily. After hypnotherapy, she was kept comfortable on 4-8 mgms. of medrol daily and was able to eliminate medications for pain relief.

A twenty-eight-year-old patient, married for nine years, complained of severe distress because of dyspareunia. This childless woman stated that marital relations were as infrequent as once every three to six months. As a last resort, surgery had been contemplated for the unhappy couple. Two introductory sessions were ample to develop the trance state. At the third session, suggestions were given concerning relaxation and pain relief prior to and during coitus. Relief was immediate and complete. It was unnecessary for any additional hypnotic sessions.

Pain associated with acute subdeltoid bursitis and low lumbosacral conditions were relieved during hypnotic sessions by positive and post-hypnotic suggestion.

One patient with nausea and vomiting of pregnancy was seen at the office in an acute phase. Under hypnosis, the nausea and vomiting disappeared dramatically and she left completely comfortable.

Three patients with proven duodenal ulcers volunteered the information that during the course of hypnotherapy for weight reduction active symptoms referable to their ulcers disappeared with the subsidence of their tensions and anxieties.

One patient who suffered severe apprehension and nervousness accompanied by vomiting

for two weeks prior to his impending marriage, was treated by hypnosis. Vomiting stopped and he was able to walk down the aisle without difficulty. Symptoms did not recur after the wedding.

One college student who was a severe stutterer of fourteen years' duration was so materially aided that he was able to present a spontaneous lecture in his class in Oral English without difficulty. One high school freshman was able to increase his ability to concentrate so markedly that he raised his achievement level from a low seventy to eighty-five percent, a degree of proficiency he had never previously attained. Three of six heavy smokers were able to discontinue the habit.

A nine-year-old boy was seen at the office with persistent cough of one week's duration. Medication was given and found to be completely ineffective. At the end of the second week, the child was seen again. The mother stated that the cough was now intractable but disappeared during sleep. X-ray of the chest and physical examination were negative. It was decided that the cough was not of organic origin. Hypnosis was induced. The child was told that he would not cough upon awakening, the virtues of not coughing were compared with the discomfort and physical harm that might ensue from continued, unproductive, useless cough. The response to the suggestions was immediate and final. The child did not cough again from that time on.

There were no harmful effects of any kind in the entire series. No one resented being a member of a group, although some whose problems were particularly personal preferred individual consultations. Not infrequently, solo members attended a group session and a group member requested a solo session. No difficulty or confusion was encountered at any time. When suggestions were being given concerning weight reduction, those to whom they did not apply were told not to listen but to think of other things instead. If remarks were being addressed to those with anxiety problems, those present for weight reduction were told not to listen unless the particular suggestions applied to them as well.

It was also not unusual to achieve success and failure in the same patient at the same time. For example, an obese, extremely nervous nailbiter might stop biting his nails and be completely relieved of his anxiety, yet be unable to lose weight. Or one who wished to stop smoking, lose weight and be relieved of insomnia, might fail in the first and succeed in the latter two. Or a single symptom might be successfully relieved while two or more others remain unchanged.

Hypnotherapy was utilized in treating groups of patients with multiple complaints simultaneously. The percentage of effectiveness and success in each condition was apparently not altered whether the patient was treated alone or with others. Contrary to reports appearing in medical and lay publications, weight reduction by hypnosis and diet alone is not as easily attainable as reported. Only sixty-three percent of those who attended a sufficient number of sessions, solo or in a group, could be considered as having lost satisfactorily. By contrast, there was not one failure in the group of eighteen nailbiters. Almost all surgical patients obtain immeasurable benefit. To fail to offer hypnosis to this group is to deprive them of a most valuable adjunct in their postoperative care. It is of immense aid in every day general practice. In many conditions, it is a most valuable adjunct in therapy. In others it is the therapeutic agent of choice.

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In the following discussion, the author has endeavored to present this material as it applies to standard office and private hospital practice, rather than as it might apply in a teaching or research institution. The techniques mentioned have all been tested in private practice and have proved of practical value in the management of - - - -

The Hypertensive Patient

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In the past ten years, there has become available a plethora of drugs with which to treat patients with hypertension. Which patients shall be treated and with what drug or drugs is the question on which there is no agreement, even among those who have had extensive experience in the management of hypertensive patients. To add to the difficulty is the cost factor as far as private patients are concerned; an extensive evaluation for this disease can run into a good deal of money. However, the medications used in treating this disease are moderately expensive and must be given for extended periods of time. For this reason, a thorough evaluation which indicates treatment is not desirable is far cheaper than an unsatisfactory evaluation which results in an unnecessary program of medication.

When a physician is confronted with a new patient with a single elevated blood pressure reading, an immediate question presents itself and must be resolved: 1. Is the patient truly hypertensive, and if so, what is the average diastolic blood pressure level? The author conceives hypertension to mean diastolic hypertension which will be arbitrarily defined for the purposes of this article as values in excess of 100 mm. of mercury with the realization that some patients, particularly females, can carry diastolic levels of this magnitude or slightly higher for many years without evidence of damage. The author does not consider as true hypertension a blood pressure, for example, of 250/90, feeling that this represents only a lack of elasticity of the vascular system rather than a true hypertension. No treatment is indicated for systolic hypertension *per se*.

It has been proved by many investigators and by extensive clinical experience that an isolated blood pressure reading obtained in the office and hospital is often spuriously high when compared with readings obtained during the patient's normal existence. (The author has coined the term "white coat hypertension" for situations of this nature.) Treatment for hypertension should never be instituted on the basis of one blood pressure recording. It is desirable in every patient to assess their blood pressure level while at home and, to this end, they are taught to take their own blood pressure while in the office on the first or second visit and are loaned a blood pressure cuff and stethoscope

in order to obtain blood pressure readings. These readings are obtained three to four times a day for an approximate two-week period. (In occasional cases, it is easier to obtain sporadic office blood pressure determinations taken *by the nurse* rather than to attempt home recording.) It is on the basis of these figures that a determination of whether a patient is hypertensive or not is made. The average diastolic pressure is also obtained from these blood pressure values.

If after these studies, the patient is felt to have true hypertension, three more questions present themselves: 1. Of which sex is the patient? 2. Is there evidence of damage to end organs from the elevated blood pressure? 3. What is the cause of the hypertension?

The sex of the patient is important because women tolerate elevated blood pressure levels considerably better than men and, for that reason, pressure levels that require treatment in males may be judiciously ignored in females.

The concept of end organ damage is a valuable one. Regardless of the level of elevation of the diastolic pressure, if the pressure level can be determined to be causing damage to the brain, heart, kidneys, or eye grounds, treatment must be instituted. Therefore, specific examination of these areas is mandatory in each patient with hypertension.

The cause of the hypertension is important, since five percent of hypertensives have causes of their disease which require surgical intervention. The work-up outlined below should be sufficient to answer the last two questions posed above and to give data of sufficient reliability to allow a practical treatment program to be based on them: 1. Thorough history and physical examination with particular attention to the heart, eye grounds and nervous system. 2. Urinalysis and *meticulous microscopic examination.* 3. Blood urea nitrogen determination. 4. Chest x-ray. 5. Electrocardiogram. The following additional studies are indicated in certain selected patients, particularly in younger individuals and for those with sudden onset of hypertension. 1. Intravenous pyelogram. 2. Aortography in selected cases. 3. Urinary catecholamine determination (if not locally or generally available, an intravenous Regitine test may be substituted). 4. Further studies for pheochromocytoma, including provocative tests and retroperitoneal air insufflation. 5. Miscellaneous tests (ureteral catheterization with the determination of volume and of sodium excreted in patients thought to have unilateral kidney disease; cold pressor test; lumbar sympathetic block; PSP excretion test or other tests of renal function; cardiac fluoroscopy for left ventricular hypertrophy; urine culture for evidence of pyelonephritis, 17-hydroxysteroid determinations; serum potassium, carbon dioxide and if available, aldosterone determinations, etc.).

At the conclusion of this evaluation, the physician should be able to answer two questions: 1. Is there any evidence of hypertension which would be amendable to a surgical approach (pheochromocytoma, coarctation of the aorta, Cushing's syndrome, aldosteronism, unilateral renal disease)? 2. Is there evidence of end organ damage due to hypertension?

In the first situation, appropriate surgical treatment is mandatory. In the second situation, if end organ damage is demonstrable, treatment is mandatory. If no end organ damage is demonstrable, but average diastolic pressures are of a level suggesting that end organ damages will occur in the future, treatment probably should be instituted. Unfortunately, there is no agreement on what the exact level of the diastolic pressure is which will cause damage. The author feels in general that sustained diastolic pressures of 110 mm. of mercury or greater in women, and 100 mm. of mercury or greater in men (age fifty and under) should be treated regardless of whether end organ damage can be demonstrated. These diastolic values may be graded upwards somewhat in more elderly individuals.

Assuming that treatment is indicated, the author agrees that the concept of the step-wise treatment of hypertension is the most desirable and rational one, except in malignant hypertension. The following are suggested as the steps to be taken in treatment; if the first or

succeeding steps is not successful, the next step is added to the treatment program until a therapeutic effect (reduction of diastolic blood pressure to a "safe" level) occurs. It is most important to realize that patients respond differently to these medications and that the most effective and best tolerated treatment must be determined empirically in each individual patient.

The following program is not applicable in every situation, but is a reasonable starting point: 1. Reassurance, additional rest, modification of life stresses and mild sedation (phenobarbital). 2. Rauwolfia preparations. 3. Rauwolfia preparations plus chlorothiazide (or hydrochlorothiazide). 4. Rauwolfia plus chlorothiazide (Diuril®) plus hydralazine (Apresoline®). 5. Rauwolfia or chlorothiazide and ganglionic blocking agent (Ecolid® or Inversine® — Note: patients receiving ganglionic blocking agents should be hospitalized during initial regulation). 6. Rauwolfia and chlorothiazide and ganglionic blocking agent. 7. Rauwolfia, chlorothiazide, hydralazine and ganglionic blocking agent. 8. Rauwolfia, chlorothiazide, hydralazine, ganglionic blocking agent and Dibenzyline. 9. If unsuccessful with this program, consider sympathectomy.

Malignant hypertensives should be started directly on Rauwolfia and a ganglionic blocking agent rather than starting at the lower steps. Hydralazine should be used on all patients with azotemia because of its reported ability to increase renal blood flow.

Other drugs currently being investigated include mono amine oxidase inhibitors and the benzyl analogue of serotonin (BAS); these drugs exert a hypotensive effect in some patients, but to date have not found wide use.

Two very promising relatively new drugs are guanethidine (Ismelin®) and bretylium (Darenthin®). These drugs are post ganglionic adrenergic blocking agents, and therefore block only sympathetic rather than all autonomic ganglia. They are very potent antihypertensive agents, but unfortunately like previously available ganglionic blocking drugs produce mainly an orthostatic hypotensive effect.

Side effects are rather common following the use of any of these drugs. Whereas there are no absolute contraindications to therapy with these drugs, there are a great number of relative contraindications which must be balanced against the therapeutic effect desired. The side effects or complications which may occur with these drug groups are as follows: 1. Rauwolfia Preparations: nightmares, insomnia and rhinitis are common, but not serious side effects; severe mental depression occurs in an occasional patient while on this medication; peptic ulcer may be exacerbated by this medication, particularly in high dosage. 2. Hydralazine: this drug often causes headache or rhinitis. It also causes a tachycardia which may make angina pectoris considerably worse. 3. Chlorothiazide: this drug should be avoided in all patients with a tendency to hypokalemia (i.e., periodic familial paralysis; hyperaldosteronism). 4. Ganglionic Blocking Agents: due to the frequency with which orthostatic hypotension occurs in even the best regulated patients treated with these agents, they should be used with caution on patients having jobs of responsibility, (i.e., airplane pilot), or in people who work about machinery (i.e., a drill press operator). They should be used with great caution in patients with a recent myocardial infarction due to potential hypotension; these drugs should also be used with caution in patients with partial bowel obstruction or with prostatic hypertrophy, since they may result in complete bowel or complete bladder obstruction. Blurred vision and photophobia are common with their use as is dry mouth. Impotence in males is often a problem. 5. Adrenergic blocking agents—these agents, as previously mentioned, also produce orthostatic hypotension, so the above cautions also pertain to this drug group; in addition, generalized fatigue, diarrhea, and bradycardia often accompany their use.

Certain measures of dealing with these side effects are available. Reserpine, for example, with its tendency to cause bradycardia will counteract the tachycardia of hydralazine. Antihistaminics frequently improve hydralazine

headache. Supplementary potassium should be given with chlorothiazide or hydrochlorothiazide. Pilocarpine nitrate by mouth or pilocarpine eye drops will help visual blurring or photophobia. Testosterone will often help the impotence noted. Leg and abdominal muscle contracting exercises will help reduce mild orthostatic hypotension. Atropine will improve guanethidine diarrhea. Patients should be instructed to change positions very slowly while using these drugs. They should also be instructed that the supine position will relieve the symptoms of a severe hypotensive episode until the drug effect abates.

It is the contention of the author (and it is acknowledged that this is a controversial point) that no group of these drugs should be used in high dosage. It is felt that the use of several drugs in moderate dosage is more effective than high doses of single agents. The average doses recommended of these preparations are: 1. Reserpine: 0.25 mg. twice a day initially, with maintenance of 0.25 mg. daily. 2. Hydralazine: not over 50 mgms. four times a day (higher doses cause lupus-like disease in ten percent of patients if given over a long period of time). 3. Chlorothiazide: a quarter of a gram to one gram daily. 4. Ganglionic Blocking Agents: Ecolid- 25 to 200 mgms. daily; Inversine- 5 to 20 mgms. daily. 5. Adrenergic blocking agents: guanethidine—12.5 to 75 mg daily; bretylium—300 to 600 mg daily.

Medications should never be discontinued suddenly because of the possibility of hypertensive rebound (i.e., sudden marked elevation in blood pressure with resultant hypertensive encephalopathy, stroke, or myocardial infarction).

Precipitous lowering of the blood pressure is to be avoided particularly in the aged. It is not desirable to reduce the blood pressure to a completely normal level because of the rather frequent incidence of hypotensive side effects that occur periodically if the pressure is depressed to this degree. Rather it is desirable to reduce the diastolic pressure to a level which is not felt to represent a long term danger to the individual. Diastolic values of 95 to 105 in females and 90 to 100 in males are felt to satisfy this criteria.

Summary

It is felt most important in this chronic disease that there be close rapport between the physician and the patient. It is essential that the patient understand his disease and the need for continued therapy and the need to tolerate at times certain undesirable or unpleasant side effects in view of the long-term good to be obtained. In no other disease, except possibly diabetes, is intelligence, cooperation, and physician-patient rapport more important to long-term results than in the management of essential hypertension.

809 South 15th Street

Cor Pulmonale may be defined as the disease that results from chronic chest disease. The term is not satisfactory but its use over many years has established it in our system of nomenclature. It means failure of the right heart as a result of pulmonary hypertension subsequent to chronic lung disease.

COR PULMONALE

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One function of the chest is ventilation. Ventilation is the mass movement of air in and out of the lung. It depends upon the integrity of the nervous system, anatomical normality of the chest wall, and the ability of the lung to expand and contract. There must be no obstruction to the free passage of air in the airways, and the distribution of air must be uniform and equal. The air then reaches the alveoli in equal distribution and concentration.

A second function of the lung is respiration. Respiration is the transport of gas across the membrane of the alveolus and the capillary wall. It is dependent on many factors, such as normal cell membranes, and there should be no obstruction on either side of the membrane. The gases must be in proper concentration so that diffusion may take place. Internal respiration is important, and it consists of the transport of gas across the capillary membrane and the membrane of the individual tissue cell. Many factors are in operation to maintain this normal transport. Circulation must be intact in the lung in order for transport to occur.

It is obvious that many factors can lead to chronic lung disease. There may be a disturbance in the nervous mechanism controlling respiration. The thoracic cage may be deformed or the musculature of the chest wall or diaphragm be abnormal. Obstruction to the air passages may occur. The inherent reflexes of respiration may be altered causing failure of pulmonary function. Deformities of the chest wall which can lead to interference with pulmonary function are kyphoscoliosis either congenital or acquired or traumatic-congenital or surgical injuries to the chest wall, such as thoracoplasty. Pleural disease may interfere with the normal pulmonary function. The lung may be the causative agent as seen in asthma, asthmatic bronchitis, cystic disease of the lung, chronic bronchitis, with or without bronchiectasis, as well as emphysema. Fibrosis of the lungs is also a common cause. Fibrosis may result from interstitial pneumonitis, Hamman-Rich syndrome, scleroderma, silicosis, chronic pneumonitis, tuberous sclerosis, as well as radiation effects. Granulomas of the lung may produce chronic disease such as: pulmonary tuberculosis, sarcoidosis, fungal infection, etc. The vascular disorders of the lung are many. They include aneurysms, pulmonary hypertension, lues, repeated embolization, amniotic

fluid embolization, periarteritis nodosa, as well as vasoconstrictive phenomena.

Any one of these chronic conditions or any combination of them may set up a chain reaction which is best described in the following manner: There is established a chronic pulmonary disease. As a result of the chronic pulmonary disease, there is reduction in the pulmonary vascular capacity. This leads to pulmonary hypertension which in turn is reflected to the right side of the heart. As a result of the chronic pulmonary disease, hypoxia occurs and polycythemia results. Polycythemia with increased pulmonary viscosity aggravates pulmonary hypertension. Hypervolemia causes increased cardiac output which furthers the strain upon the right ventricle. As these factors continue, the right heart fails and congestive failure results.

Cor Pulmonale may be divided into three types, the *acute form*, the *sub-acute form*, and the *chronic form*. The *acute form* is always the result of massive embolization of the pulmonary artery. This is characterized by severe precordial pain, cyanosis, rapid heart action and dyspnea. Clinically, the pulmonary artery may be enlarged; there may be accentuation of the pulmonary second sound and occasionally, a diastolic murmur may be heard. The chest film may reveal an enlarged pulmonary artery and the electrocardiogram shows an acute right heart strain pattern. The treatment is supportive. Surgical removal of the embolus may be attempted. Vasodilator drugs are used along with anticoagulants, oxygen, and antibiotics. One may attempt to prevent further embolization by ligating the inferior vena cava.

The prognosis is dependent on many factors and varies from patient to patient. Occasionally, an *Acute Cor Pulmonale* may develop in the patient with severe and extensive viral pneumonia. We have seen this on a few occasions. In these patients, the clinical course of the pneumonitis was suddenly complicated by the appearance of acute right heart strain and even by heart failure. These patients, however, invariably survive the acute heart strain.

Subacute Cor Pulmonale is usually the result of either malignant embolization of the lung or a lymph-angiolitic type of infiltration by malignant tissue. *Subacute Cor Pulmonale* can occur in patients with severe pneumonitis. The signs and symptoms are similar to those that shall be described later.

The signs and symptoms of *Chronic Cor Pulmonale* may be divided into the pulmonary phase. On physical examination, the patient is dyspneic, coughing, often cyanotic with clubbing of the fingers. Physical examination may reveal asthmatic wheezing with rales present throughout the lung fields. The patient at times gives the story of hemoptysis. The heart phase is reflected in an increase in venous pressure. The right heart is invariably enlarged to physical examination. The apex beat is displaced upward and to the right because of the clockwise rotation of the heart. The second pulmonic sound is accentuated and a diastolic murmur is not uncommon. Occasionally, a systolic as well as a diastolic murmur may be heard. If the heart has failed, there will be signs of congestive failure with enlargement of the liver and the liver often pulsates. In addition, peripheral edema often will be present. Occasionally these patients give the story of typical angina of effort.

The laboratory data varies depending upon the underlying pulmonary disease. The routine laboratory procedures reflect the presence of infection, and whether concommitant diseases exist. Polycythemia is invariably present, and there is usually increase in the blood volume. The venous pressure is increased. The circulation time is prolonged. The arm to tongue circulation time may be within normal limits. If the venous pressure is not elevated, as the patient lies in bed, pressure over the upper portion of the abdomen and liver will cause a marked distention of the jugular veins. This is known as the hepato-jugular reflux and is characteristic of right heart failure. The fluoroscopic examination will show the dilated pulmonary artery and right heart enlargement as well as the underlying pulmonary disease. The chest film usually reflects the fluoroscopic findings.

The electrocardiogram is very important in recognizing the right ventricular hypertrophy. V 4 R and V 3 R as well as V 1 and V 2 leads usually show tall R waves. In these leads, the S wave may be rather small. The left V 5 and V 6 leads usually have a small R wave with a deep S wave. The T waves are inverted in V 1 and V 4 and usually upright in V 5 and V 6. A right bundle branch block may exist. In the standard leads, right axis deviation is present with signs of right heart strain. In the second and third leads a very high P wave may be present, known as the Katz wave. The x-ray findings and the electrocardiographic findings are dependent upon clockwise rotation of the heart associated with enlargement of the right ventricle. If the patient has a concommitant cardiac condition that produces strain on the left heart or if rotation fails, the x-ray and electrocardiographic findings will be absent.

Treatment

The treatment of Chronic Cor Pulmonale may be divided into two parts.

The treatment of the chronic (pulmonary condition) chest condition. Here one may have to use antispasmodics, bronchial dilators, antibiotics, breathing exercises, and the like. Aminophylline may be given orally, by rectum or intravenously to assist in breathing, and potassium iodide is often indicated. Surgery may be indicated in certain chest deformities, and adrenalin may be used for the acute asthmatic condition. Oxygen should be used if the patient is hypnoxic. One must exercise caution in its use. Steroids may be used to augment the therapy.

The treatment of the heart failure depends upon, first, the integrity of the heart. Many patients develop right heart strain secondary to the pulmonary hypertension but never go through heart failure. One attempts as far as possible to prevent right heart strain by vigorous treatment of the chronic thoracic condition. Should congestive heart failure occur, however, the patient should be on a low sodium regime with mercurial diuretics and digitalization.

Occasionally, the polycythemic phase may be relieved by bleeding but one must take care that venous pressure does not fall too greatly, as it may worsen the patient's condition. This is also true in the use of digitalis for, occasionally, the therapeutic drop in venus pressure will aggravate the patient's general condition. Any associated heart disease should be treated in its own manner.

Summary

Clinical Cor Pulmonale results from pulmonary hypertension which has been induced by chronic pulmonary disease. As a result of the pulmonary hypertension, strain is placed upon the right heart and dependent upon the type of pulmonary disease as well as the rapidity of its progress. The integrity of the right ventricle controls the course of the Cor Pulmonale. The diagnosis should be suspected in any individual who has chronic lung disease. Clinically, it should be suspected whenever the individual's dyspnea is out of proportion to his physical findings. It should also be suspected whenever an individual who has been very dyspneic can suddenly lie flat in bed without any evidence of dyspnea. In both such instances, the presence of positive hepato-jugular reflux will suggest the diagnosis. The diagnosis may well be established by the physical signs outlined above and supported by the x-ray and electrocardiographic diagnoses. The treatment of the disease is directed to the underlying pulmonary condition as well as congestive heart failure.

Chronic Cor Pulmonale is not an uncommon disease in individuals suffering from chronic thoracic illness. It is recognized best by those who are alert to its possible existence.

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Muscular Spasm and Pain

The use of carisoprodol (Soma®) in industrial and general practice

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Muscular spasm and pain are often seen in industrial and general practice. The two symptoms are related, since muscular spasm may lead to pain and pain usually induces muscular spasm and limitation of motion. As Cooper and Epstein[1] pointed out, such disorders of the musculo-skeletal system are on the increase due to a number of factors, including automobile accidents as well as overenthusiastic leisure time activities in those who lead a relatively sedentary life.

Drug therapy for the two different symptoms has usually consisted of one type of drug for pain and a different type of drug for the muscular spasm. The advent of carisoprodol (Soma®), a drug with muscle relaxant and pain relieving abilities, is therefore of particular interest.

Carisoprodol belongs to the propanediol series. Berger[2] found that in animals it could depress or abolish multineuronal spinal reflexes such as the crossed extensor reflex; it also modified the central perception of pain so that the animals would tolerate movement of an inflamed joint. This pain relief produced by carisoprodol was observed after smaller doses than that needed to relax muscles. Since the drug has no demonstrable anti-inflammatory properties, and no significant antipyretic action, it must be classified apart from the well known analgesics. Its low toxicity recommends it for clinical use.

This paper is to report an evaluation of carisoprodol in industrial and general practice.

Method

Forty-four patients suffering from muscular spasm and pain due to acute or chronic orthopedic conditions were treated with carisoprodol. The group consisted of thirty-two men and twelve women, between the ages of sixteen and seventy-two years. The thirty acutely ill patients had chiefly traumatic conditions such as sprains and strains, or inflammatory conditions such as sciatica and bursitis. The thirteen chronically ill patients, arbitrarily considered to include those whose disorder had been present for three months or longer, were suffering from rheumatoid arthritis, osteoarthritis, or chronic disorders of the low back. Two patients had acute renal colic apparently not associated with musculoskeletal disease, and will be mentioned separately (A summary of the cases is given in Table I).

TABLE I SUMMARY OF PATIENTS TREATED WITH CARISOPRODOL

CASE NO.	AGE	SEX	DIAGNOSIS	SYMPTOM DURATION	PREVIOUS THERAPY	SOMA DOSE	OTHER THERAPY	EVALUATION OVERALL	SIDE EFFECTS
1.	49	M	Lumbosacral strain	2 wks.	None	2 qid.	None	Excellent	None
2.	31	M	Thoracic vertebral injury	2 wks.	None	1 qid.	None	Excellent	None
3.	35	F	Tenosynovitis right shoulder	2 wks.	None	2 tid.	None	Very good	None
4.	50	M	Sacro-iliac sprain	3 wks.	Empirin compound with ineffective results	2 tid.	Microtherm	Very good	None
5.	50	M	Sciatica, right	3 wks.	Salicylates, fair results	2 tid.	None	Very good	None
6.	62	F	Rheumatoid arthritis	6 mos.	Steroids, Salicylates with severe side effects & ineffective results	2 tid.	B_{12}	Very good	None
7.	58	M	Left saco-iliac arthritis & lumbosacral sprain	6 mos.	Salicylates with gastric upset as side effect with no help	1 tid.	None	Very good	Mild drowsiness
8.	43	M	Strain of right pectoralis muscle	4 days	None	1 bid.	Cortisone injection once a week	Excellent	None
9.	44	M	Lumbrosacral sprain	4 days	None	1 tid.	2 Cortisone injections per week	Excellent	None
10.	40	F	Bursitis, right shoulder	6 days	None	1 bid.	1 Cortisone injection per week	Excellent	None
11.	69	F	Hypertension and osteo-arthritis	6 mos.	Salicylates with poor results	1 bid.	Reserpine	Very good	Drowsiness
12.	57	M	Osteoarthritis	6 mos.	Salicylates and B_{12}, poor results	1 tid.	Hydrocortisone weekly	Very good	None
13.	38	F	Lumbosacral strain	12 days	None	1 qid.	None	Excellent	None
14.	58	F	Osteoarthritis	6 mos.	Salicylates with poor results	1 qid.	None	Very good	None
15.	35	M	Fracture left arterior rib mid-clavicular line	1 day	None	1 qid.	None	Good	None
16.	63	M	Sciatica, right	4 days	None	2 qid. for 72 hrs.	Cortisone injection once a week.	Very good	None
17.	55	M	Sacro-iliac sprain	3 days	None	1 qid.	None	Very good	None
18.	38	M	Ankylosis of right wrist	5 days	None	2 tid. for 48 hrs.	None	Excellent	None
19.	38	M	Traumatic injury to soft tissues of chest	1 wk.	None	1 qid.	None	Excellent	None
20.	44	M	Lumbosacral sprain	2 wks.	Robaxin with poor results	1 tid.	Physiotherapy	Excellent	None
21.	50	M	Bursitis, left shoulder	3 wks.	Salicylates and phenylbutazone with gastric upset & fair results	1 bid.	Physiotherapy	Excellent	None

CASE NO.	AGE	SEX	DIAGNOSIS	SYMPTOM DURATION	PREVIOUS THERAPY	SOMA DOSE	OTHER THERAPY	EVALUATION OVERALL	SIDE EFFECTS
22.	32	F	Sciatica, left	3 mos.	Steroids and Salicylates with fair results	1 qid.	1 Cortisone injection weekly	Very good	None
23.	40	F	Tenosynovitis, right foot	2 wks.	Salicylates with poor results	1 qid.	None	Very good	Drowsiness
24.	40	M	Lumbosacral strain	3 mos.	Salicylates with poor results	1 qid.	None	Excellent	None
25.	32	M	Lumbosacral sprain and polyarticular arthritis	3 mos.	Steroids with poor results	1 qid.	Physiotherapy	Very good	None
26.	27	M	Lumbosacral strain	12 days	None	1 bid.	None	Excellent	None
27.	37	M	Thoracolumbar sprain	5 mos.	Salicylates with poor results and gastric side effects	1 bid.	Steroid injection twice weekly	Excellent	None
28.	62	M	Lumbosacral sprain	2 mos.	Over-the-counter drugs, poor results	1 qid.	None	Very good	Vertigo
29.	16	M	Lumbosacral sprain and left shoulder sprain	2 days	None	1 qid.	Physiotherapy	Very good	None
30.	31	M	Renal colic, right and lumbosacral sprain	1 mo.	Other muscle relaxants, poor results	1 qid.	Microtherm	Very good	None
31.	72	F	Renal colic, right	2 mos.	Salicylates, poor results	1 tid.	Bentyl® injections	Good	None
32.	38	F	Sacro-iliac sprain	3 mos.	Salicylates and muscle relaxants with poor results	1 qid.	None	Very good	None
33.	40	M	Lumbosacral sprain	6 mos.	Over-the-counter drugs with poor results and G.I. upset	1 bid.	Physiotherapy	Very good	Transient drowsiness
34.	51	M	Sprain of right wrist	3 wks.	None	1 qid.	Ultrasonic therapy	Very good	None
35.	44	M	Lumbosacral strain	1 day	None	1 tid.	Microtherm	Excellent	None
36.	47	M	Lumbosacral osteoarthritis	Several mos.	Salicylates, poor	1 tid.	None	Excellent	None
37.	27	F	Sciatica, right	2 wks.	Steroids with fair results	1 bid.	Steroids	Very good	None
38.	48	M	Thoracolumbar osteoarthritis with sporing	3 mos.	Salicylates, poor	1 tid.	Microtherm	Very good	None
39.	40	M	Lumbosacral strain	1 day	None	1 tid.	Physiotherapy	Excellent	None
40.	37	M	Degenerative changes of lumbosacral disc	1 wk.	None	1 tid.	None	Very good	None
41.	32	M	Lumbosacral sprain, acute	Few hrs.	None	2 tid.	Physiotherapy	Very good	None
42.	30	M	Lumbosacral strain, acute	1 day	Salicylates, poor	1 qid.	Physiotherapy	Excellent	None
43.	27	F	Lumbosacral sprain, acute	1 day	None	1 qid.	Physiotherapy	Very good	None
44.	35	M	Sciatica, right	2 wks.	Physiotherapy	1 qid.	None	Good	None

Dosage of carisoprodol varied from one tablet (350 mgms.) given twice a day to two tablets four times a day, as an initial dosage, depending on the size of the patients and the severity of their symptoms. The drug* was given to the subjects, who were instructed to return in two days for re-examination. On their second visit, they were again given medication but this time identical appearing lactose placebos were dispensed. The patients were instructed to take the medication on the same schedule and to return again in two or three days.

On their next visit, they were again given tablets of carisoprodol and maintained on it as long as needed. Dosage was adjusted to the minimum needed.

Patients were evaluated at each visit for muscle pain, joint pain, limitation of motion, irritability, insomnia and muscle spasm. Estimation of the degree of severity of each of these six symptoms was rated as mild, moderate, severe or very severe. A final overall evaluation of the improvement in each patient was made after two to six weeks; recovery was rated as "excellent," if there was full remission of symptoms, "very good," if the symptoms were greatly relieved, "good," if there was substantial relief, and "poor," if there was little or no relief of the symptoms.

Results

All patients reported some relief of their symptoms within the first two days of treatment with carisoprodol. At that time the inert placebo was instituted without the patients' knowledge. On the next visit, all patients complained of a recurrence of the original symptoms, although the severity of the symptoms was usually less than that originally experienced. When the actual drug was readministered they again obtained relief. Thus it was clear, by using an inert placebo as a control, that carisoprodol had given the patients relief in the first few days.

About half the patients in the study received therapy other than carisoprodol alone. Eight received injections of steroids once or twice weekly; nine were treated with physiotherapy; four were given microtherm treatments and four received miscellaneous drugs. Two patients who had been receiving steroids previously were maintained on these along with the carisoprodol. Although the results had been only fair on steroids alone, the response was very good when the two drugs were used together. The response to physiotherapy also seemed to be enhanced by carisoprodol. This procedure was facilitated by the muscular relaxation and pain relief afforded by the drug and the effects of the treatment seemed to last longer.

While final evaluation of the patients could not be made by a controlled method since these were all private patients who needed active therapy, a comparison of their rates of recovery with that of similar cases treated in the past suggested that carisoprodol speeded up their recovery. Final overall evaluations were as follows: of the thirty-one acutely ill patients, fourteen were excellent, fourteen were very good, three were good; of the thirteen chronically ill patients, three were excellent and ten were very good. There were no "poor" results.

An interesting observation was made on two patients with renal colic. One of these, who had both lumbosacral sprain and renal colic, was given carisoprodol for the low back pain. Surprisingly, both conditions improved. Therefore, when the second patient came in with renal colic alone, carisoprodol was tried along with injections of the smooth muscle relaxant dicyclomine (Bentyl®) hydrochloride. This patient had a good response, though it is impossible to say whether this was due to the skeletal muscle relaxant carisoprodol or the smooth muscle relaxant dicyclomine or both.

Side Effects

No serious side effects were noted from carisoprodol. Mild drowsiness was reported by

* Carisoprodol (SOMA®) in the form of coated 350 mg. tablets was furnished through the courtesy of Wallace Laboratories, New Brunswick, New Jersey.

four patients, one of whom was also receiving reserpine for hypertension. This drowsiness was so slight that it required no treatment or disappeared on reduction of the dose. Vertigo was reported by one patient.

Discussion

The use of carisoprodol had two distinct beneficial effects in these orthopedic patients. The first was a prompt relief of the symptoms, noted within two days and proven to be a result of the drug by the substitution of the inert placebo as a control. This finding is in agreement with the findings of others[1, 3, 4] who noted symptomatic relief within the first few hours or days in orthopedic patients.

The second benefit noted from the use of carisoprodol was the speeding up of the rate of recovery. While this could not be proven by a controlled method since all the subjects were private patients and given active treatment, experience indicates that they recovered faster than similar patients have done previously.

Summary

Carisoprodol (Soma®) was given to forty-four patients seen in the private practice of industrial and general medicine. These patients suffered from acute traumatic and inflammatory conditions or from chronic conditions such as osteoarthritis and the low back syndrome.

These patients were evaluated with regard to the muscle pain, joint pain, limitation of motion, irritability, insomnia and muscle spasm.

By substituting a placebo on the second day of treatment, then reinstituting carisoprodol, it was shown that relief of muscular spasm and pain was due to the drug rather than to a placebo effect.

The rate of recovery of these patients was faster than that of similar patients not treated with carisoprodol. The overall response in the patients was considered excellent in seventeen (thirty-eight percent), very good in twenty-four (fifty-four percent), and good in three (seven percent) of the subjects. There were no poor responses.

Side effects from carisoprodol were minimal, and consisted of only mild drowsiness in four patients and vertigo in one.

Carisoprodol is recommended for its prompt and efficient relief of muscular spasm and pain in orthopedic conditions.

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GOITER: Some Newer Concepts in Diagnosis and Treatment

There are certain areas in the United States where goiter formerly was endemic, notably the Great Lakes area and the Pacific Northwest. Careful experiments from time to time have shown that the soil in these areas is poor in iodine. Authorities generally agree that deficient iodine is the cause of goiter. Since vegetables grown in iodine rich soil are now distributed throughout the United States, goiter no longer is endemic.

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Apparently with the scarcity of iodine in the blood, there is an increase in the thyrotrophic hormone secondary to the decrease of the thyroid hormone. This change in the balance of these hormones is probably the major factor in the development of goiter.

There have been many classifications of goiter, but for the purpose of clinical recognition and treatment, the one proposed by the American Goiter Association seems the most practical.

I. Diffuse goiter: a. Non-toxic and b. Toxic.

II. Nodular goiter: a. Non-toxic and b. Toxic.

III. Thyroiditis

IV. Cancer of the thyroid

Diffuse Non-Toxic Goiter

Diffuse non-toxic goiter occurs most frequently in adolescent girls. There is a gradual enlargement of the thyroid gland without symptoms, or there may be a sense of lassitude. Occasionally, pressure symptoms may appear, if the gland becomes quite large.

Examination reveals the gland to be rubbery in consistency, soft in texture and diffusely enlarged.

The basal metabolism rate is normal or low. The iodine uptake is normal or slightly increased. Mild anemia is often present.

The prevention of these goiters is important. This can readily be done by the use of iodized salt in the food. The concentration requirement is one part iodine to 100,000 parts salt.

The treatment, if the patient is seen early before involution changes have occurred, is

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iodine, five mgms. daily. If seen later, the effective treatment is the administration of desiccated thyroid, grains one to two daily. Surgical treatment is contraindicated, unless pressure symptoms are troublesome.

Diffuse Toxic Goiter or Graves' Disease

The classical symptoms of this disease follow a more clear-cut pattern than any disease known to medicine. The primary cause still remains unknown. The symptoms, however, are produced by an overactivity of the thyroid hormone (thyroxine).

The most common symptoms are sustained rapid heart, hypertension with high systolic and low diastolic pressure, with consequent high pulse pressure. Warm moist skin, weakness, loss of weight, increased appetite, nervous tension, insomnia and quadriceps weakness are other symptoms. These symptoms vary according to the severity of the disease.

The physical findings are exophthalmus, facial stare, a fine tremor of the fingers, the hair is fine, and the nails are brittle. The thyroid gland is enlarged, firm, and rises on swallowing. A bruit may be heard over the gland; a thrill is usually palpated, and the pulse is quick and bounding. The patient is unable to step up on the examining table due to quadriceps weakness.

The basal metabolic rate is increased. The cholesterol is diminished in proportion to the severity of the hyperthyroidism. The protein bound iodine concentration is above 8.0 micrograms per 100 ml. The uptake of radioactive iodine is usually increased above sixty percent.

The diagnosis of Graves' Disease offers no particular difficulty when the disease is full blown. The characteristic history, the dominant physical findings, and the positive four laboratory tests leave no doubt of the correct diagnosis.

Occasionally, a patient may have hyperthyroidism for many years then gradual remission. The toxic effect of the hyperthyroidism becomes pronounced on the heart muscle and the patient enters into cardiac failure. This condition is known as thyrocardiac. A careful history and thyroid studies are necessary to find the cause of the failing heart. Fortunately, the removal of the thyroid after careful preparation corrects the condition. I recall one patient seen twenty years ago who had been under treatment for ten years for hypertensive cardiovascular disease. After thyroidectomy and proper cardiac care, she returned to normal health and is now active at the age of eighty-four years.

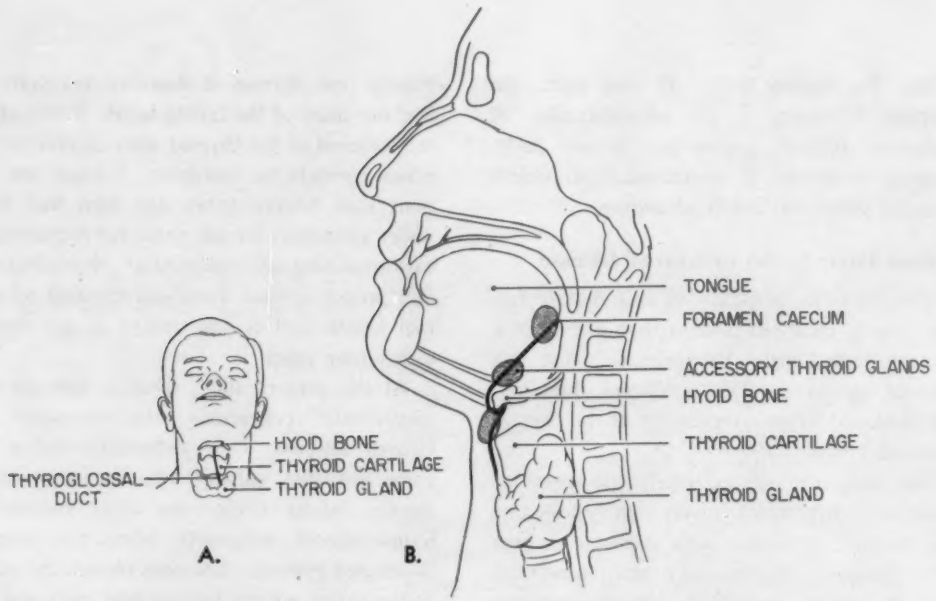
At the present time, there is considerable controversy concerning the treatment of Graves' Disease. Until radioactive iodine became available, surgery was the treatment of choice. Many clinics are using radioactive iodine almost exclusively; others are using it in selected patients. The ones chosen for radioactive iodine are the bad surgical risks and the elderly people. There are other clinics which have long depended upon surgery exclusively which are using radioactive iodine only on those patients who cannot be properly prepared for surgery.

The argument for surgery is that a small part of the thyroid tissue can be saved; recurrence has been rare, and the end result is excellent.

Those using radioactive iodine claim the recurrences can be treated again up to the point of total destruction of the thyroid gland. These patients often become myxedematous and may have to take thyroid extract indefinitely.

Milton Eller, et al[1] have reported the largest series of patients treated with radioactive iodine. They also explored the literature and quoted a large series of patients who were treated by other clinicians. In their series, there were one thousand and forty patients with Graves' Disease treated with radioactive iodine. Of this number, ninety-two percent were recorded as cured (one-to-ten-year follow-ups). Eight percent were made permanently myxedematous and required thyroid therapy. If one considers ten years after treatment the necessary period of time to ascertain cure, then their series will have to be reevaluated in later years.

One of the pitfalls in evaluating the dose of



EMBRYOLOGY OF THE THYROID GLAND

A. Course of the Thyroglossal Duct.

B. Lateral View of the Thyroglossal Duct Showing Other Possible Location of the Accessory Thyroid Glands.

radioactive iodine is the ability to properly measure the size of the diseased thyroid gland. Only a clinician with vast experience can accurately measure the gland size.

Recurrences of hyperthyroidism after radioactive iodine therapy may occur from a few months to a year or more. Sometimes the toxic state is temporary and the hyperthyroidism may disappear in time. When to treat a patient for recurrence requires much experience and frequent observations.

In the final analysis, both surgery and radioactive iodine are satisfactory, and the choice of treatment may depend upon the problems which the patient presents, the resources of treatment available, and the skill of the surgeon or clinician.

Iodine as an exclusive therapeutic agent is no longer employed. The remission it may achieve is temporary and unsustained.

When propylthiouracil was introduced many years ago, it had the promise of adequate results, but it did not sustain remission of the disease over a prolonged period. Propylthiouracil, however, proved to be a very valuable drug in preparing toxic patients for surgery.

Nodular Non-Toxic Goiters

Nodular, non-toxic goiters are of two types: *the single adenoma* and *the multinodular*.

The single adenoma has long been known by clinicians and pathologists to be prone to the development of cancer. The percentage of cancers found range from one to twenty percent, but the majority of these cancers are of low grade malignancy. Previous to ten years ago, these single nodules were considered surgical, and were treated as possible malignancies.

Radioactive iodine has not produced a disappearance of these nodules in a sufficient number to warrant its use routinely. Surgery is still the treatment of choice.

The multinodular goiters are often associated with hypothyroidism. Treatment consists of the use of thyroid extract. Two grains daily. If the nodules do not disappear, surgery is indicated.

Nodular Toxic Goiter

Nodular toxic goiter differs from Graves' Disease in that hyperthyroidism occurs in previously existing adenomata. The symptoms of hyperthyroidism occur later in life. This disease is prone to affect the heart muscle and to cause hypertension, auricular fibrillation and myocardial failure.

Previous to the advent of radioactive iodine, treatment consisted of care of the heart by the use of rest and digitalis together with propylthiouracil or iodine, until the myocardial balance was restored. When surgery was considered safe, thyroidectomy was performed. The results were satisfactory, and after the toxic state was removed, the cardiac condition usually returned to normal.

The present trend in treatment is toward radioactive iodine. Milton Eller, et al,[1] in their most recent report, showed successful treatment obtained in ninety-two percent of their four hundred and thirty-six patients. However, when these same authors reviewed the literature, it was found that many clinics still prefer surgery to radioactive iodine in the treatment of toxic nodular goiters.

In our clinic, surgery remains the treatment of choice. After forty years of experience, our end results have been so satisfactory that we hesitate to go all out for radioactive iodine.

Successful surgical results are due to proper preoperative care, the control of the myocardial damage, the postoperative medical treatment, and the skill of the surgeon. Although cancer of the thyroid seems to be less dreaded than in former years, surgical removal of the nodular goiter allows careful pathologic study which is impossible when the radioactive iodine is used.

Finally, the choice of treatment in nodular toxic goiter may be determined when sufficient time has elapsed after large series of cases treated with radioactive iodine have been followed for ten years or more.

Thyroiditis

Acute or subacute thyroiditis is thought to be due to infection by a virus. It is self-limited and may last from a few weeks to several months. It may be acute at the onset with high fever, severe pain and prostration, or it may be mild with few symptoms, other than local soreness and swelling in the thyroid gland. It may involve all the gland or a part of it. The gland, on examination, is hard and tender. The protein bound iodine is low and the sedimentation rate is high.

The treatment is the administration of cortisone or one of the other steroids in fairly large doses which promptly controls the disease. Recurrence of symptoms after withdrawal of the steroid can be treated by either a second course or by x-ray or cobalt therapy. The disease is self limited; the gland does not suppurate, and the function of the gland is not impaired.

Cancer of the Thyroid

The incidence of cancer of the thyroid is reported high by pathologists and low by clinicians. Some pathologists have found cancer cells as high as twenty-five percent of goiters removed. Clinical diagnosis of cancer of the thyroid is often a difficult problem. The most helpful diagnostic criteria are the alterations in the neck. The mass in the thyroid gland is of stony hardness and fixed to the surrounding structures. It may cause compression of the trachea, the vessels of the neck, or the recurrent laryngeal nerve. A large percentage of cancers develop in a preexisting adenoma. The history of the presence of an adenoma for many years and the sudden rapid enlargement together with the bone hardness is almost conclusive of cancer.

There is a considerable controversy regarding the treatment of cancer of the thyroid. There are many varieties of cancer; some are radioiodine sensitive; others are not.

Lahey,[2] in a series of two hundred thirty-one patients treated by surgery and x-ray therapy, found the survival rate ranged from twenty percent to eighty percent in five years. The rate of survival depended upon the type of cancer found.

Radioactive iodine has proved to be of very little benefit in the majority of such patients.

Here again the type of malignancy determines the success or failure in the use of radioactive iodine.

We are of the opinion that surgical removal of as much of the tumor as possible, followed by x-ray or cobalt therapy, is the treatment most effective in eradication of the disease.

Finally, it should be understood that hypothyroid states are not desirable because some of these cancers are dependent upon the thyrotrophic hormone for growth and are stimulated to increased growth when the normal inhibition ot thyrotrophic production is destroyed. Therefore, it follows that thyroid extract is indicated when the thyroid function is destroyed by surgery and radiation. Fortunately, the majority of thyroid cancers are inhibited by thyroid therapy similar to prostate cancer which is inhibited by estrogen therapy. The end results are excellent except in the highly malignant cancers of the thyroid. These are not benefited by any form of treatment. In general, it may be said that life expectancy in cancer of the thyroid is on an equivalent basis to that of cancer of the prostate.

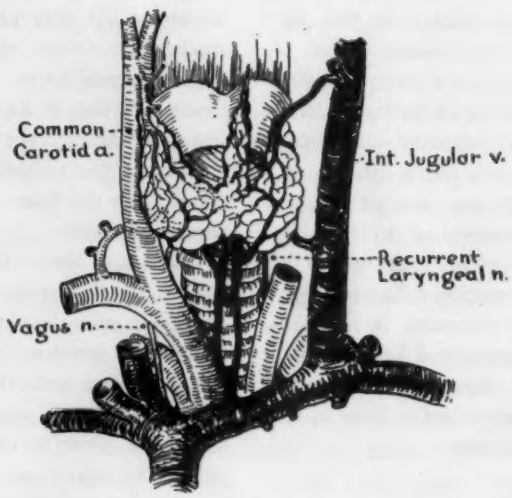
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CLINI-CLIPPING



Blood and nerve supply of the thyroid gland.

The use of an oral androgen-estrogen combination for

Suppression of Lactation

The suppression of lactation and control of postpartum breast symptoms constitute a real clinical problem. The early postpartum administration of hormones can effect a physiologic suppression of lactation without the inconveniences and physical discomforts of breast binders, ice packs and strict fluid limitation.

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Lactogenesis is by no means a simple process. Major roles in the formation of milk are assigned to estrogen, progesterone and to the lactogenic hormone, prolactin. A complete picture would involve, however, oxytocin and the antidiuretic hormone as well as other endocrine secretions. Present-day knowledge of the physiology of lactation justifies the administration of suppressive doses of androgen and estrogen jointly on the basis of two distinct endocrine effects.[8, 9] Both hormones exert a depressant influence on the anterior pituitary gland preventing the production and release of prolactin to stimulate the breasts. In addition, the estrogen acts to decrease the susceptibility of the mammary glands to prolactin. Since both effects are highly desirable, the combination of hormones is a rational and practical procedure.

Although either androgen[1-3] or estrogen[4-7] may be employed for the purpose of supression of lactation with a successful outcome, a wide clinical experience favors the use of androgen and estrogen in combination.[1, 8-12] The critical influence on response to treatment appears to be the promptness with which an adequate hormone level is established following expulsion of the placenta to block production and release of the lactogenic hormone by the anterior pituitary gland. A second requisite for a satisfactory result is the maintenance of suppressive levels in the puerperium pending physiologic readjustment. Consequently, with any form of hormone therapy, dosage schedule is a primary consideration for optimum control of lactation and associated breast manifestations in the non-nursing mother.

During pregnancy, progressively rising titers of estrogen and progesterone are responsible for the marked development of the breasts and for their preparation to assume a milk-producing function.[8, 9, 13] The absence of active lactation during this period is explained by a simultaneous inhibitory influence on the pituitary exerted by the elevated levels of circulating hormones and by their ability to render the breasts refractory to prolactin stimulation. At parturition, expulsion of the placenta eliminates the principal source of these hormones,[13] so that estrogen and progesterone levels decline rapidly, inhibitions to the pituitary are released and the breasts become responsive to prolactin. The continuance of a suppressive influence on lactation requires an adequate exogenous supply of compensatory hormones as soon after

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delivery as possible. Since the mechanical action of suckling establishes a pattern of reflex neural stimulation to perpetuate the secretion of milk,[14] nursing must be avoided.

In the present study,* an oral androgen-estrogen preparation (Estan®) was employed to suppress lactation and to control postpartum breast symptoms in a series of patients selected at random and only because they expressed an unwillingness to breast feed their newborn. Each tablet contained 5 milligrams of methyltestosterone and 0.25 milligram of dienestrol. Previous experiences with this combination demonstrated a highly effective medication,[1, 8-10] well tolerated, and largely free from the disturbing side effects attributable to a physiologic predominance of either of the sex steroids.[1, 8-10] Two dosage schedules were explored for apparent differences in control achieved. These had previously been employed in separate clinical groups. A satisfactory result was obtained in ninety-one percent of patients given two tablets of Estan, three times daily, for five days[9] and in 95.5 percent of patients taking medication in doses of three tablets daily for two days followed by two tablets three times daily for two days and one tablet three times daily for one day.[10] The investigation described in this communication was carried out to compare both schedules in equal groups of patients for evidence of the superiority of one over the other in initiating and maintaining suppression of lactation.

Method

A total of one hundred and ten patients delivered in the obstetric service of a private hospital were treated with Estan as soon after the expulsion of the placenta, as oral medication could be tolerated. Patients were selected without regard for age, parity or previous nursing experience. A series of fifty-six women received the hormone preparation in the schedule of two tablets, t.i.d., for five days. The remaining fifty-four were placed on the second schedule of three tablets, t.i.d., for two days followed by two tablets, t.i.d., for two days and one tablet, t.i.d., for one day. No other measures for "drying-up" the breasts were employed. Fluid intake was in no way restricted and supportive breast binders were forbidden.

Patients were examined and observations recorded daily during hospital confinement and follow-up was maintained after discharge for symptoms of secondary engorgement, since this is a relatively common and troublesome complaint when estrogens are administered to prevent lactation. With both series of patients, response to medication was appraised in accordance with physical findings of engorgement and leakage and subjective expression of pain and discomfort. The absence of breast symptomatology was considered a satisfactory result.

Results

A comparison of the results accomplished with Estan in the two dosage schedules described is presented in Table I. Both schedules proved equally effective for control of postpartum lactation as employed in this study. Of the fifty-six patients given two tablets, t.i.d., for five days, forty-nine (87.5%) experienced no lactation and minimal or no tenderness. Breasts were free from engorgement on examination and there were no complaints of discomfort. On the other hand, engorgement and associated discomfort were present in five (8.9%) instances and secondary engorgement occurred in one (1.8%) patient. In the second series, in which fifty-four women were placed on a tapering dosage schedule, forty-six (85.2%) experienced no breast symptoms while five (9.2%) showed engorgement and complained of discomfort. Secondary engorgement occurred in two (3.7%) cases. The high percentage of suppression achieved is essentially in keeping with the findings of earlier studies.

The medication was remarkably well tolerated by the patients participating in this inves-

*Estan,® containing 5 mgms. methyltestosterone and 0.25 mgm. dienestrol, was supplied for this study by Dr. Delbert L. Long, Jr., White Laboratories, Inc., Kenilworth, New Jersey.

TABLE I RESULTS WITH ESTAN® IN SEPARATE COURSES OF THERAPY

DOSAGE SCHEDULE	NUMBER OF PATIENTS	LACTATION SUPPRESSED	BREAST DISCOMFORT & ENGORGEMENT	SECONDARY ENGORGEMENT	BLEEDING WITHDRAWAL
I 2 tablets, t.i.d. for 5 days	56	49 (87.5%)	5 (8.9%)	1 (1.8%)	1 (1.8%)
II 3 tablets, t.i.d. for 2 days; 2 tablets, t.i.d. for 2 days; 1 tablet, t.i.d. for 1 day	54	46 (85.2%)	5 (9.2%)	2 (3.7%)	1 (1.9%)

tigation. Nausea and vomiting did not occur. Withdrawal bleeding was encountered in one patient with each dosage schedule but was of no serious consequence. There were no major problems during this appraisal. Drawbacks of postsuppression rebound of symptoms and increase of vaginal bleeding or discharge attributed to other hormone preparations, and particularly true of estrogens, were relatively uncommon. Because both dosage schedules were capable of achieving and maintaining suppressive hormone levels with approximately equal clinical results, the simpler prescription of two tablets, t.i.d., for five days was considered best suited for routine use. There appeared to be no practical advantage, since withdrawal bleeding was rare and occurred in both groups, to the gradual tapering of dosage from initial levels.

Comment

An impressive body of literature has accumulated concerning the use of hormone therapy to suppress lactation and to control postpartum breast symptoms in the non-nursing mother. The preference for a combination of androgen and estrogen may be rationalized on the basis of present-day knowledge of the process of lactogenesis. Given together, the sex steroids exert a twofold influence on lactation, depressing pituitary production and release of the lactogenic hormone and rendering the mammae refractory to prolactin stimulation. Moreover, combined administration tends to balance out unwanted effects directly referable to a predominance of either androgen or estrogen. A further consideration of the factors believed to be involved in lactation firmly links success of therapy with certain fundamental requisites. For a satisfactory result, the hormone combination must be given soon after expulsion of the placenta to avert the release of inhibitions to the pituitary occurring with a decline in endogenous levels of progesterone and estrogen at parturition and it must be administered in adequate blacking dosage. Suppressive hormone levels must then be maintained pending physiologic readjustments in the puerperium.

An oral preparation containing 5 mgms. methyltestosterone and 0.25 mgm. dienestrol (Estan) appears to offer an impressive opportunity for control of postpartum breast manifestations when administered in a simple schedule of two tablets, t.i.d. for five days beginning with the day of delivery. In a series of one hundred and ten patients, occurrences of spontaneous lactation in spite of treatment were remarkably few. A distinct superiority over estrogen therapy was demonstrated by a virtual absence of rebound phenomena. Also, the incidence of withdrawal bleeding was insignificant. Considerations of efficacy and convenience are in favor of this preparation for routine lactation suppression.

Summary

Suppression of lactation and control of postpartum breast symptoms constitute a real clinical problem. Experience with an oral androgen-estrogen preparation (Estan®) in one hundred and ten non-nursing mothers indicated that a high order of suppressive action is achieved with a simple dosage schedule of two tablets, t.i.d. for five days. No advantage was observed in tapering dosage during the five postpartum days. Occurrences of spontaneous lactation were few, withdrawal bleeding was encountered in only two patients and rebound phenomena were minimal

In the series presented, medication was uniformly well tolerated. Nausea and vomiting did not occur and no serious disturbance in postpartum readjustment was observed. In terms of efficiency, tolerance, and convenience, Estan offers ample opportunity for a successful regimen.

Consideration is given to the physiology of lactation as a rational basis for the combination of androgen and estrogen in a schedule initiated soon after delivery and maintained pending normal readjustments in the puerperium.

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STOP AT CORONER'S CORNER . . .

Read the stories doctors write of their unusual experience as coroners and medical examiners. PAGE 38a

Coagulation Problem Conference

NORTH CAROLINA MEMORIAL HOSPITAL

Clotting Defects with Hydatidiform Mole

This conference was edited from the proceedings of one of the departmental and interdepartmental conferences held weekly at NCMH. Dr. J. D. Geratz acted as editor. Participants in this conference were Dr. K. M. Brinkhous (moderator), Drs. John B. Graham, N. F. Rodman, and J. D. Geratz (pathology), Drs. R. A. Ross and L. M. Talbert (obstetrics), Dr. John H. Ferguson (physiology) and Dr. Harold R. Roberts (medicine).

DR. K. M. BRINKHOUS: We have a rather unusual case of a coagulation defect occurring as a complication of a hydatid mole for consideration today. Dr. Geratz will first present the clinical and laboratory data, and then we will proceed with a general discussion of many of the problems encountered in this interesting case.

DR. J. D. GERATZ: This was the fourth pregnancy for this 28-year-old woman who had had two previous term deliveries and one abortion. The last menstrual period was 12 weeks prior to this admission. She was well until approximately two weeks prior to admission when she noticed the onset of slight but persistent vaginal bleeding and also began to experience increasing nausea accompanied by vomiting.

On admission she was rather pale and weak and appeared moderately dehydrated. There was a subsiding generalized urticaria, the cause of the rash being an allergic reaction to phenobarbital. The temperature was 98°F, blood pressure 130/70 mm. Hg., pulse rate 86/min. and respiratory rate 16/min.

Examination

The uterus was considerably larger than would be expected in a pregnancy of 12 weeks duration, the fundus being located at the level of the umbilicus. Fetal parts could not be felt, nor could fetal heart sounds be heard. The cervix was closed. X-ray examination did not show any fetal bony structures. The clinical impression was that the patient probably had a hydatid mole.

The hematocrit was 35, and white blood count 8,600 with a normal differential count. The direct bilirubin was 1.1 mg.%, total bilirubin 1.9 mg.%. The electrolytes were unremarkable. There was 2+ proteinuria and 4+ acetonuria. The urine sediment contained 20-30 red cells and 4-6 white cells/HPF.

The patient w s treated with bed rest, i.v. fluids, Dramamine and Compazine. There was some decrease in nausea and vomiting, but there was no improvement in the general condition of the patient.

Two days after admission the hematocrit had dropped by 10 points to 25, a decrease not

CLOTTING DATA

DAYS AFTER ADMISSION	3	4 a.m.	4 p.m.	5	6	7	8	9
Prothrombin Time (sec.) (control—12.7 sec.)	21	16	15	17	21	22	14	12
Partial Thromboplastin Time (sec.) (control—75 sec.)	166	113	131	108	175	151	79	74
PERCENT OF CONTROL:								
Fibrinogen	85	40	36					
AHF	38	89	74	87	140	122	122	130
PTC	43	43	36	70	77	87	85	107
Stuart	13	16	20	15	12	8	47	
Factor VII	16	38	32	11	13	6	40	
Prothrombin	15	11	13	11	12	10	64	93
TRANSFUSION WHOLE BLOOD	2 units		1 unit					
VITAMIN K						10 mg.	10 mg.	

accounted for by the external blood loss. It was decided to remove the suspected mole as soon as possible. The patient received 3 units of fresh blood, and on the fourth day after admission a hysterotomy with removal of a large hydatid mole was performed.

The patient withstood the operation well and there were no postoperative complications. Postoperative medications included tetracycline, 250 mg 4 times daily.

Liver function studies done on the third postoperative day gave some evidence of liver damage. There was a BSP retention of 24%, and the cephalin flocculation test was 1+ after 24 hours and 2+ after 48 hours. By the fifth postoperative day, however, liver function had become nearly normal, with a BSP retention of only 7% and a negative cephalin flocculation test. The total bilirubin at that time was 1.1 mg.%.

Repeated examinations of the urine showed disappearance of protein, but persistence of small numbers of red cells. Free hemoglobin was not demonstrated in the urine. PSP excretion was diminished, amounting to only 35% in 2 hours.

Coagulation Studies

On the third day after admission (one day prior to the operation) comprehensive coagulation studies were done on the patient's plasma and revealed deficiency of nearly all clotting factors examined. The prothrombin time was 21 sec. (control 12.7 sec.), and the partial thromboplastin time was 166 sec. (control 75 sec:).

The levels of antihemophilic factor (AHF), plasma thromboplastin component (PTC), factor VII, Stuart factor, and prothrombin were markedly reduced. Only the fibrinogen level was near normal, initially. The platelet count was 75,000.

Immediately after transfusion of 3 units of blood, on the day of the operation, the levels of AHF and factor VII had about doubled. The levels of Stuart factor, PTC and prothrombin, however, remained essentially unchanged, while the fibrinogen level even dropped to 36% of the control.

In the three days following the operation the AHF and PTC levels spontaneously rose to near normal values. Factor VII levels, on the other hand, decreased to less than the pretransfusion values, and Stuart factor and prothrombin also showed a further decline. At this poin the patient was given 10 mg of vitamin K and within 24 hours a striking increase in these factors had occurred.

After an additional 10 mg of vitamin K, on the next day, the prothrombin level was nor-

mal and so were the prothrombin time and the partial thromboplastin time.

Course After Discharge

The patient was discharged on the 12th hospital day.

She was readmitted for a D & C three weeks later. The pathologic diagnosis on the uterine scrapings was syncytial endometritis. The hematocrit was normal, and the urine was unremarkable. Several pregnancy tests done at monthly intervals were negative.

DR. BRINKHOUS: There are many problems brought up by this case, and I will call first upon Dr. Ross for any comments he would care to make.

DR. R. A. ROSS: The clinical diagnosis of hydatid mole was rather easily made from the size and shape of the uterus, the absence of fetal heart sounds and the failure to demonstrate fetal bones on x-ray examination. We did not study the level of chorionic gonadotrophin because the determination would not have helped us much in our diagnosis. The level is high in hydatid moles, but will also be inordinately high in normal pregnancies around the 90th day of gestation. The incidence of toxemia of pregnancy is noteworthy in hydatidiform mole.

Hydatid mole is a rather rare tumor in this country, probably one case in every two thousand pregnancies; but it is a relatively frequent complication in Indonesia and the Philippines and this may suggest some racial predisposition. In our population, however, the white and colored races appear equally affected. The reason why some women develop hydatid mole is still unknown, though some investigators have considered the possibility of a hypersensitivity reaction, similar to the reaction causing erythroblastosis fetalis.

Usually, it is our method to deliver these patients vaginally. But here we had to resort to a hysterotomy because the patient was going downhill and the cervix was still closed. In the course of our preoperative studies we were concerned over her clotting mechanism, and the advance information on her clotting defects was of great help to us in handling the situation.

Laboratory

DR. BRINKHOUS: We might look at the laboratory findings and see how we can explain the disturbance in her clotting mechanism. These studies were all done in your laboratory, Dr. Graham, and you may want to give your opinion regarding the results.

DR. J. B. GRAHAM: This was the first case of this type that I have had the opportunity to study, and there were certainly many interesting and surprising findings. The prolonged prothrombin and partial thromboplastin times suggested that this patient was either severely deficient in those factors that affect both tests, such as factor V or Stuart factor, or that there was a more complex situation.* The latter proved to be true as shown by the assays for the individual clotting factors which were all clearly abnormal. Although the initial fibrinogen level was nearly that of the control, I suspect this represents a low value for this patient, because in pregnancy the fibrinogen level is usually elevated. The mild persistent hematuria was not surprising, because hematuria is often the first evidence of a hemorrhagic crisis, e.g., in hemophilia and during anticoagulant therapy.

It was interesting to follow the patient's response to transfusion and the administrations of vitamin K. After transfusion the antihemophilic factor came rather quickly back to normal, followed at a somewhat slower rate by the plasma thromboplastin component. On the other hand, the levels of Stuart factor, factor VII, and prothrombin—substances normally produced in the liver—were not influenced by the transfusions of whole blood, but

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* Prolongation of the prothrombin time will result from a deficiency of one or more of the following factors: prothrombin, factor V, factor VII, Stuart factor and possibly PTA and Hageman factor.

Prolongation of the partial thromboplastin time will result from a deficiency of one or more of the following factors: AHF, PTC, factor V, Stuart factor, Hageman factor, PTA, prothrombin.

responded to the administration of vitamin K. This is analogous to our experience with overdicumarolized patients. Transfusions seldom affect these factors significantly and it is always necessary to give vitamin K. One puzzler is why the PTC level returned to the normal range before vitamin K was given; PTC is probably also produced by the liver and its formation is dependent on the presence of vitamin K.

Reduced Intake

DR. GERATZ: As shown by the cephalin flocculation test and the BSP retention as well as by our specific assays the liver function was certainly impaired, and several factors may have contributed to this. The patient had had little food intake for about two weeks preceding her admission and probably glycogen and other stores in the liver were rather depleted. The dietary intake of vitamin K was presumably reduced. We can assume an influence of the tetracycline on the intestinal flora, and therefore the supply of vitamin K from bacterial sources was probably decreased also.

DR. BRINKHOUS: From what has been said several mechanisms might have been operative in this case to affect liver function: a disturbance of carbohydrate metabolism, some possible "toxic" damage, and lack of vitamin K. I want to stress one point, however. Administration of vitamin K will correct an existing deficiency of the vitamin, but it will not improve liver function impaired for other reasons. The dramatic response of this patient to vitamin K can be taken as evidence that vitamin K deficiency was the main problem at the time of its administration and that the other pathogenic mechanisms were no longer of great importance.

It should be emphasized also that the body is not able to store large amounts of vitamin K. For the supply of the vitamin the body normally has to depend on diet and probably bacterial flora of the gut. In our case here, in face of a reduced supply of the vitamin there was probably an increased need for vitamin K, for the liver had to replenish factors lost with bleeding and also presumably with intravascular clotting.

Impairment

This brings up another aspect of this case. It is a widely held concept today that some of the complications of pregnancy, such as toxemia, abruptio placentae, dead fetus, and rarely hydatid mole may be accompanied by thromboplastinemia, the thromboplastic material probably originating in necrotic tissue in the product of conception. The release of such material into the maternal blood stream may induce clotting and will lead to the depletion of factors such as AHF and also of platelets, while other factors such as Stuart factor, PTC and factor VII would be expected to remain unchanged. I believe in our case one pathogenetic mechanism was impaired liver function, both through cellular injury and hypovitaminosis. Another mechanism appears to have been intravascular clotting. Dr. Roberts, you have studied thromboplastinemic states with intravascular clotting. Would you like to remark on your experience as to the effects of thromboplastinemia in experimental animals?

Experiments

DR. H. R. ROBERTS: The purpose of our studies, which Dr. Penick, myself and others undertook, was to find the cause of some of the hemorrhagic complications of pregnancy, of carcinoma of the lungs and of operations, and to see whether they could be attributed to thromboplastinemia or fibrinolysis. We found that injection of small amounts of thromboplastin into dogs would decrease the levels of AHF and factor V and the number of platelets but with these small amounts, fibrinogen was not significantly altered. With larger quantities we could also reduce the fibrinogen level to near zero.

Fibrinogen Levels

DR. J. H. FERGUSON: Since 1901, cases of so-called uteroplacental apoplexy with a hemophilia-like state have been observed, and since then physicians have become more and more

EFFECTS OF VARIOUS PATHOGENETIC MECHANISMS ON CLOTTING FACTORS

	AHF	PTC	FACTOR V	FACTOR VII	PROTHROMBIN	STUART FACTOR	FIBRINOGEN	PLATELETS
Intravascular clotting	D	?U	D	U	D	?	D	D
Fibrinolysis	D	?	D	?	D	?D	D	U
Vit. K. Deficiency	U	D	U	D	D	D	U	U
Liver Damage	?D	D	?D	D	D	D	D	?

D—Decreased U—Unchanged

aware of the disorders of hemostasis in cases with premature separation of the placenta, eclampsia, amniotic fluid embolism and occasionally in hydatid mole. The common factor in these cases is usually a lowered fibrinogen level. Some show fibrinolytic enzyme activity and multiple coagulation defects.

In the present case we have to approach the explanation in three ways: 1) intravascular appearance of thromboplastin, 2) impairment of liver function, and 3) possibility of activation of fibrinolysin, keeping the fact in mind that tissue fibrinolysokinases are especially rich in the uterine tissue.

DR. ROSS: In our practice hypofibrinogenemia is most commonly seen in uterine apoplexy and in patients with a retained dead fetus, the latter sometimes in the presence of Rh sensitization. I do not believe that uncomplicated amniotic fluid embolism will cause hypofibrinogenemia. We injected amniotic fluid into dogs and noticed no ill effects. In cases where the amniotic fluid contains meconium, however, shock will be an important factor and often prove fatal.

I do not know what part of a mole could be responsible for the thromboplastinemia; the hydatid fluid certainly does not seem to have anything remarkable about it. Dr. Roberts, in your experiments did you find any intravascular fibrin deposits after the injection of thromboplastin?

Fibrin Deposits

DR. ROBERTS: We could not demonstrate any fibrin deposits in those animals that came to autopsy. Other investigators encountered the same fact, and it has been suggested that the clotting process itself may activate the fibrinolytic enzyme system which then removes the fibrin. However, we were unable to show such an activation consistently in our experiments. May I also say that there seems to be some activation of fibrinolysin in conditions of acute stress, and that fibrinolysin will also attack AHF.

DR. GERATZ: As to the occurrence of fibrin deposits in fatal cases with hydatid mole, I would like to mention the report of at least one such case in the literature. At autopsy there were found widely distributed intravascular deposits, the fibrin stands characteristically arranged in the flow lines of the blood.

DR. FERGUSON: We studied a woman with abruptio placentae who showed the presence of active fibrinolysin and depressed levels not only of fibrinogen but also of factor V. The low levels of fibrinogen and factor V were explained by the proteolytic action of fibrinolysin on both these substrates. AHF levels and the platelet count were normal in this case. I would like to add here that episodes of fibrinolysis or intravascular clotting and the resulting changes in the clotting factors are often extremely shortlived. If either of these events be followed by continued hemorrhaging, however, the factors, already lowered, may be removed faster than the damaged organs, especially the liver, can build them up. Such a mechanism may account in part for the fact that this patient's deficiencies were seen over a period of several days.

DR. N. F. RODMAN: I wonder also where fibrinolysis may not have played a role in the patient, though the laboratory data do not include any remarks on clot lysis. Fibrinolytic

activation may result in multiple deficiencies, for besides fibrinogen and factor V, probably prothrombin, factor VII and Stuart factor are also susceptible to the proteolytic action of fibrinolysin. Dr. Wagner here has clearly demonstrated that AHF can also serve as a substrate for this enzyme.

In a given patient with fibrinolytic activity, we do not necessarily have to find a reduction in all these factors, but often only some of them are definitely low. As an example I might mention a 72-year-old man whom I recently studied. There were repeated episodes of fibrinolysis and massive hemorrhage, with decreased levels of prothrombin, factor V and Stuart factor, but with a normal level of AHF. It is possible that the AHF level had been low initially, but had already come back up to normal at the time of our studies.

Dilution

DR. GERATZ: I would like to ask Dr. Talbert one question not related to the clotting defect. How did you explain the drop in the hematocrit by 10 points within the first two days after admission? There was apparently not sufficient external blood loss to account for this, nor was there evidence of hemolysis.

DR. L. M. TALBERT: We were somewhat at a loss to explain this. When the patient was admitted, she appeared dehydrated and therefore she received goodly amounts of intravenous fluids. I think that dilution may have accounted for at least part of the change in the hematocrit.

DR. BRINKHOUS: In summary, this case has focused our attention on the bleeding diathesis that occurs as a complication of hydatiform moles. The patient presented with a deficiency of many of the clotting factors, and we have to assume that several pathogenetic mechanisms were at play to give the rather complex picture observed:

- *Thromboplastinemia.* Necrotic material from the degenerating mole may gain access to the blood stream and act as thromboplastin. Intravascular clotting with fibrin deposits and depletion of several coagulation factors will result.
- *Fibrinolysis.* Fibrinolysin may be activated by tissue fibrinolysokinases liberated into the blood and possibly by the intravascular clotting process also. Fibrinolysin, a proteolytic enzyme, will split fibrin molecules as well as other clotting factors.
- *Vitamin K Deficiency.* Insufficient supply of vitamin K will lead to decreased levels of prothrombin, factor VII, PTC and Stuart factor, because the liver can manufacture these materials only in the presence of the vitamin.
- *Liver Damage.* Hepatocellular damage can result in a deficiency of all factors produced by the liver whether their formation is dependent on vitamin K or not.

Of the pathogenetic mechanisms suggested, it appears that initially episodes of thromboplastinemia occurred. There may have been an associated fibrinolysinemia, but we can form no definite opinion from the data available. Liver damage likewise may have been of importance. Certainly vitamin K deficiency was present, as indicated by the prompt response to administration of the vitamin. The uterine hemorrhage of this patient was probably related to local factors as well as to the disturbance of the clotting mechanisms. Hematuria was also suggestive of a clotting defect.

I know of only one reported case of hemorrhage and widespread intravascular clotting with hydatid mole. It would seem indicated to study carefully the levels of the various coagulation factors in any future cases of moles.

Preventive Management of Infantile Diarrhea

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The early care of the infant with diarrhea is aimed primarily at (1) the replacement of abnormal fluid and electrolyte losses, (2) the symptomatic control of the abdominal colic and tenesmus due to hyperperistalsis and (3) the elimination of the pathogen responsible for abnormal intestinal motility and absorption. The physician consulted during the incipient stages of diarrhea must be conscious of these three ends in the counseling of parents in dietary and medicinal management; if the morbidity and mortality of infantile diarrhea are to be lessened.

1. Replacement of Abnormal Fluid and Electrolyte Losses

The infant with diarrhea will lose between 100 and 400 ml of fluid. In older children, losses may be as much as 1000 ml/day. The electrolytes mainly being lost are sodium, potassium and chloride in varying concentrations as listed below.

Composition of diarrheal losses in mEq/L:

Na	K	Cl
10-90	10-80	10-110

It is important that feeding mixtures used during early diarrheas should be adequate for replacement without containing excess solute loads which may produce hyperelectrolytemia. Satisfactory feeding mixtures are available commercially in such carbohydrate and electrolyte preparations as Lytren® (Mead Johnson). The mother must be carefully instructed, however, to make up the feeding solution exactly according to the instructions on the can. More concentrated mixtures may lead to hypernatremia. A satisfactory home made mixture may be made up as follows: one pint canned sweetened orange juice, one pint water, plus 1/3 tsp. salt.

It should be emphasized that milk, both whole and skimmed, is unsatisfactory for feeding during diarrhea because of its high solute load. The infant with diarrhea loses hypotonic fluid through the stool and through insensible loss. To excrete excess solutes, he must pass hypertonic urine. If renal function is impaired because of immaturity or acute disease, his one efficient method for excreting excess solute is lost and hypertonic dehydration may result. For this reason, it is unwise to give high solute mixtures during diarrheal states.

After the diarrhea has been controlled in basic feeding mixtures, the diet may be gradually expanded with bland, non-laxative foods such as banana, rice cereal, and grated apple. In some allergic children, it may be necessary

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to use soybean milk, temporarily, following diarrhea; until altered intestinal absorption has returned to normal.

2. Symptomatic Management of the Symptoms Due to Hyperperistalsis

The use of spasmodic agents such as paregoric in the treatment of infantile diarrhea, while time-honored, is quite inappropriate, because of their tendency to produce abdominal discomfort and post-treatment constipation. Antispasmodic mixtures are better tolerated and more effective in relieving abdominal cramping and reducing hyperperistalsis. Mixtures of various belladonna alkaloids may be combined with astringent and adsorbent agents in the therapy of diarrhea. Kaolin, pectin, and resins have been employed but require relatively large doses given over twenty-four to forty-eight hours, in order to be effective. The most efficient therapy in Mercy Hospital—Loyola University pediatric Clinic is a combination of Cerium Oxalate and various antispasmodics* which may be given as a pleasant tasting liquid in fractional teaspoon dosages.

The use of symptomatic therapy to relieve abdominal discomfort in infants is an important adjunct to dietary regulation. The infant with abdominal discomfort will have a craving to suck which will make dietary restriction more difficult for the harried parent. Frequent feedings will aggravate the diarrhea by way of the gastro-colic reflex.

3. The Elimination of the Offending Pathogen

Any infant whose diarrhea has persisted beyond twenty-four hours without improvement on therapy should have a stool culture. The exception would be the child with an obvious respiratory infection in whom the diarrhea is thought to be of parenteral origin.

Bacterial pathogens of the lower intestinal tract in infancy will be the pathogenic E. coli, Proteus, Pseudomonas, and lactose non-fermenters such as the Salmonella and Shigella. While awaiting culture results, therapy may be instituted with non-absorbable sulfonamides, neomycin, streptomycin, or polymixin B by mouth. Penicillin and streptomycin may be given intramuscularly in the case of parenteral diarrhea. Diarrheas due to enteric viruses are most common during the summer months and usually have an epidemic incidence.

Any infant in whom signs of significant dehydration supervene, should have parenteral fluid therapy without delay. Intravenous fluid and electrolytes should be given in corrective doses. The minimum chemical workup should be CO_2, Na, and K determinations. The use of subcutaneous fluids in dehydrated infants is to be condemned. Detailed consideration of fluid therapy is outside the province of this paper.

* Cerebel,® provided by Xttrium Laboratories, Chicago, Illinois.

Bibliography

1. Oral replacement of fluid and electrolyte losses in infantile diarrhea must be accomplished with satisfactory solutions containing appropriate solute loads.

2. The use of symptomatic therapy for abdominal symptoms due to hyperperistalsis is endorsed.

3. The use of antibacterial therapy for lower intestinal pathogens is briefly considered.

Summary

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PHYSICAL ALLERGY

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The modern concept of physical allergy owes its origin in large part to the classic, historical descriptions of Duke in the early twenties. Prior to the introduction of the term physical allergy, Salter, in 1860, recorded the occurrence of bronchial asthma which was induced by the application of cold to the instep of a susceptible patient. In 1866, Bourdon recorded the occurrence of urticaria and syncope following exposure to cold. Another instance of cold hypersensitivity was Blachez' classic description of urticaria secondary to cold allergy in 1872.

Definition

Approximately fifty years later, in 1923, Duke introduced the term physical allergy to describe those situations of hypersensitivity in which the allergenic agents were nonprotein and were in the form of physical stimuli, such as cold, heat, sunlight, and trauma. Duke's reference to these instances of specifically acquired altered cellular response to physical agents represented a landmark in the progress of allergometry. It constituted a breakthrough in the ever-broadening area of hypersensivity, not necessarily delimited by constantly demonstrable immunologic mechanisms.

Since Duke's original work, there have been numerous contributions to the literature supporting the concept of the allergenicity of agents such as heat, cold, light, effort, stress, trauma, and atmospheric changes in the production of characteristic local and reflex tissue reactions of hypersensitivity.

The Brief for Allergy

While the mechanism for production of the response is not always clear-cut in every instance of physical allergy, there are a number of reports in which the allergic etiology has been precisely demonstrated. In these, the accepted criteria for establishment of an allergic origin are adequately met by the characteristic allergic response to the specific offending physical agents.

For the establishment of a diagnosis, it is essential to obtain a history of prior exposure to the causal agent. Following such exposure,

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there develops an alternation in the capacity of the shock organ to react, so that on re-exposure, a different response is produced from that first encountered. This altered response to the physical agents must, of course, resemble those responses to other known nonphysical allergens.

A positive familial personal allergic history will likewise support the establishment of the diagnosis of physical allergy. In further support of this diagnosis, there must be evidence of local reaction at the exposed site. Development of generalized reactions is also possible. Likewise, there can be evidence of local tolerance or tissue exhaustion resulting from continued exposure of the same site to the offending physical agent. The demonstration of eosinophilia, the role of desensitization, and the effectiveness of the usual antiallergic drugs such as antihistamines, ephedrine preparations, and steroids, lend further support to the establishment of the diagnosis of physical allergy.

Theories of Mechanism

Current theories pertaining to the mechanism of production of the allergic reaction to physical agents exclude the responses of primary irritation, phototoxic, or photodynamic reaction. It is uncertain whether the physical agents in themselves act as the specific excitant or whether an antigen-antibody reaction is responsible for the allergic symptoms.

One theory proposes that tissue protein is altered upon contact with the physical agent to produce an antigen which serves to stimulate formation of specific antibodies. A second and more popular theory points the development of a histamine or a histamine-like substance following the antigen-antibody reaction with secondary effect on the local tissue contact sites. These substances may likewise be released through the action of the central nervous system via cholinergic stimuli through the efferent peripheral nerves.

Gaining in acceptibility is the concept that the physical allergen exists as a metabolite which is present in all human skin but which is allergenic only in susceptible persons. This may be preformed and liberated on exposure to the physical agent. It may be formed from another substance such as a proantigen which is converted into antigen.

It is obvious, that in this area for demonstration of the most likely mechanism, there remains considerable opportunity for investigative research.

Reactions to Physical Agents

The major types of reaction to physical agents may be classified as local and generalized. The local reactions are those which occur at the site of contact and are usually in the form of urticarial or eczematous response. Generalized reactions occur in tissues not directly exposed and are apparently reflex in origin and may exhibit themselves in a variety of responses, such as rhinitis, asthma, purpura, gastrointestinal symptoms, hemoglobinuria, and syncope.

Cold hypersensitivity represents one of the most common types of physical allergy. Four types of cutaneous sensitivity have been described: (1) cryoglobulinemia, (2) syphilitic paroxysmal cold hemoglobinuria, (3) cold hemagglutination, (4) essential cold urticaria. Cryoglubulinemia is characterized by the presence of abnormal serum globulins which can be precipitated on cooling and which redissolve on warming.

The initial response is local urticaria, which may progress to purpura, necrosis, ulceration, and systemic hemorrhages.

In syphilitic paroxysmal cold hemoglobinuria the urticaria subsides following antiluetic therapy.

Cold hemagglutination represents a serologic reaction from agglutination of homologous or heterologous red blood cells at low temperature and is reversible on rewarming.

Essential cold urticaria is considered to be the most common form of cold allergy. Congenital and acquired cold urticarias have been described. Usually the lesions are limited to the sites of exposure, but generalized reactions may develop, with shock and death resulting. This

may explain some of the deaths ascribed to drowning.

Allergic reactions due to hypersensitiveness to heat may be classified as those producing local urticaria and described as noncholinogenic, and those which produce a generalized or cholinogenic urticaria which may be due to the effects of heat associated also with effort and stress.

The generalized or systemic variety may be associated with other manifestations of allergy such as migraine, syncope, premature beats and tachycardia.

Systemic reactions consisting of abdominal cramps, diarrhea, sweating, flushing, and salivation have been likened to the physiologic effects following pilocarpine administration. It has been theorized that in cholinogenic urticaria, there is an increase of body temperature which results in the stimulation of the heat-regulating center; this in turn further stimulates the parasympathetic nervous system to release acetylcholine, and reacts with the skin of the hypersensitive individual to produce urticaria. Hypersensitiveness may be tested by the immersion of an extremity in water at 37.7° centigrade.

Reactions of hypersensitivity to sunlight occur following exposure that would not ordinarily provoke a reaction on a normal skin. Urticaria, purpuric eruptions, and lesions suggestive of early lupus erythematosus have been noted following slight exposure to sunlight. Likewise, the skin has become photosensitized by certain substances which provoke reactions to long-wave ultraviolet and to visible rays. Most light sensitivity is manifested in the ultraviolet range of the solar spectrum which falls between 2900 and 3900 angstroms. Sensitivity to the sun's rays usually occurs in the solar spectrum some 2900 to 8000 angstroms.

Light hypersensitivities have been classified as solar erythema, chronic polymorphic light dermatitis, solar urticaria, and photodynamic dermatosis. Minimal exposure to sunlight may produce solar erythema due to ultraviolet hypersensitivity. In the ultraviolet and sunburn range of the spectrum from 2900 to 3132 angstroms, chronic polymorphic light eruptions have been noted. Solar urticaria likewise results usually from sensitivity in the ultraviolet range. Large, erythematous lesions appear on the exposed areas and may progress to generalized reactions with shock, if the exposure is prolonged. Photodynamic dermatoses result from sensitization developing after photochemical reactions produced by various dyes, drugs, and plant substances capable of absorbing light and sensitizing the involved skin area.

In the mechanism of the production of light hypersensitivity, the influence of heat is considered by some to be the triggering agent. The whealing reaction is not a normal response to sunlight exposure and therefore solar urticaria has been considered to be allergic; demonstration of circulating transferable antibodies has been reported, as well as the capacity to hyposensitize to sunlight, in support of the allergic mechanism.

The final manifestation of physical allergy to be considered in this presentation is that of hypersensitivity to trauma. The dermographic response to trauma of simple stroking is well known. This response may be immediate with the characteristic whealing, erythematous, and pruritic response, or may be delayed over a period of several hours and disappear more slowly. There is a form of pressure urticaria which, following mild constant pressure over a period of several hours, produces a type of dermographia. This may be seen in the case of truck drivers who develop an urticarial reaction on the buttocks and coal miners using the hydraulic drill, with involvement of the hands.

Therapy

As in all allergies, the management of the acute response will consist in the intelligent utilization of antihistamines, sympathomimetic preparations, and steroids in selected situations. Similarly, avoidance of the offending agent, where possible, is indicated. For subsequent control, exposure to the offending physical agent, in carefully established quantities over a

prolonged period of time, provides a technique of hyposensitization which many find satisfactory. Results with histamine hyposensitization leave much to be desired. However, all these measures, plus nonspecific agents commonly used in the control of difficult allergic manifestations, will provide increased tolerance to the physical antigen, and merit the prolonged and tedious regime of management.

6112 Jenkins Arcade Building

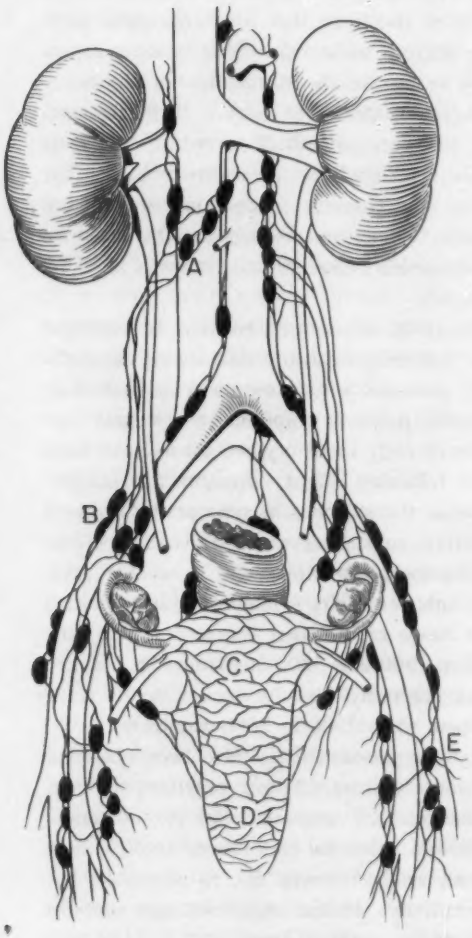
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CLINI-CLIPPING

LYMPHATICS OF ABDOMEN AND PELVIS (Female)

A. Lumbar Nodes
B. Hypogastric Nodes
C. Uterine Lymphatic Network
D. Vaginal Lymphatic Network
E. Inguinal Nodes





Volkmann's Ischemic Contracture

Volkmann's ischemic contracture is one of the most serious complications of injuries about the elbow. It is a crippling deformity of the hand and forearm that is due to circulatory interference. Anyone treating forearm injuries must be aware of the possibility of the development of this tragedy, and guard against it.

Etiology

Two thirds of cases occur in patients under the age of thirty, the greatest incidence being between the ages of two and sixteen. Swelling inside tight casts and constricting dressings is responsible for most cases. The majority follow fractures about the elbow — particularly incompletely reduced supracondylar fractures of the humerus (the commonest extension fracture of childhood). Brachial artery occlusion may be produced by hematoma and/or direct bony pressure on the artery. Fractures of the humerus higher up the shaft, fractures of the bones of the forearm, and dislocation of the elbow are occasionally responsible.

Other rarer causes are: a. damage to the brachial or axillary artery from injuries other than fracture (e.g., gunshot wound, embolus, rupture, large hematoma, edema); b. subfascial hematoma due to rupture of an artery or hemophilia; c. trauma to the forearm (e.g., crush, cold exposure, prolonged pressure on the forearm while intoxicated, improper or prolonged use of a tourniquet or Esmarch bandage).

All of these causes produce reactive swelling in the closed flexor fascial compartment of the forearm (an inelastic fibrous box), with resultant ischemia of the muscles (Figure 1). Ischemia that persists for from six to forty-eight hours (depending upon its completeness), produces irreversible muscle damage with inevitable contracture. The flexor muscles are regularly involved, but swelling within a tight circular cast may affect the extensor muscle groups also.

Pathology

After a period of ischemia, the muscles become indurated, tense, and dark blue (from extravasated blood and serum), and degeneration and necrosis of muscle fibers supervene.

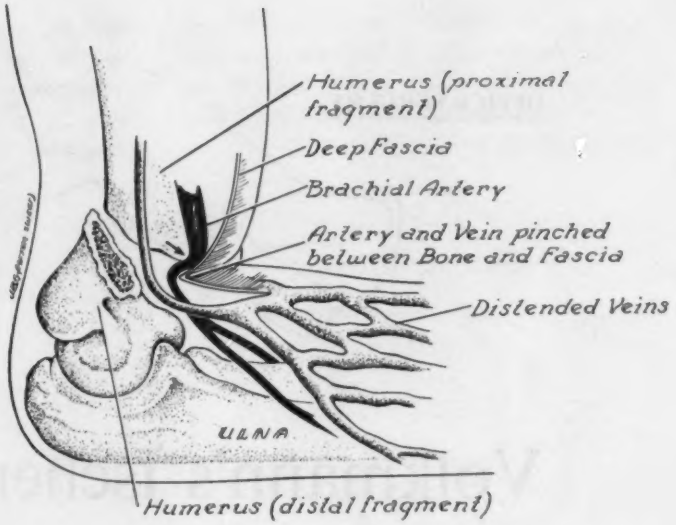


FIGURE 1 Schematic drawing showing the cause of Volkmann's Contracture in the case of un-reduced supracondylar fracture of the humerus. Posterior displacement of the forearm causes kinking of the brachial artery and veins between the bone and the deep fascia. Arterial flow to, and venous flow from the forearm are impeded (Modified from Bunnell's Surgery of the Hand).

Within a few days, organization begins; the muscle fibers are replaced by fibrous tissue and the muscles become firm and adherent to the surrounding structures. Spasm may play a role in the ischemia, but this is probably of only secondary importance. Venous occlusion may also be a factor.

The flexor digitorum profundus and sublimus, and the flexor pollicis longus, are usually more extensively affected than the pronator teres and carpal flexors. The median and ulnar nerves are also constricted and may undergo degeneration.

In time, the fibrous tissue contracts; the muscles shrink and harden, and the characteristic deformity is produced:

a. flexon of the wrist,
b. hyperextension of the metacarpophalangeal joints,
c. flexion of the interphalangeal joints, and
d. pronation of the forearm (usually).

Since there is variability in the intensity of the circulatory interference, cases vary in severity.

The onset is usually sudden, but may be insidious. Early signs of ischemia develop within two to six hours. Symptoms are: a. a feeling of tightness of the cast or dressing, b. restlessness, especially in children, c. burning pain (often severe) in the hand or forearm, d. tingling and numbness in the hand and fingers. Signs are: a. paralysis of the flexor muscles with inability to move the fingers, b. pain on attempted extension of the fingers, or cyanosis (venous insufficiency) of the hand, d. diminution of the radial pulse, and e. hyperesthesia of the fingers.

When the cast or constricting dressing is removed early, the forearm has a tendency to swell and become red, blebs appear, and pressure sores often develop.

After two days, the pain and signs of circulatory obstruction decrease. Later, a. the characteristic contracture develops, along with b. atrophy of the skin, hand muscles, and fingers, c. curvature of the nails, d. excessive cold sensitivity, e. diminished oscillometry and skin temperature readings. In about 60% of cases, glove anesthesia and paresthesias occur from nerve damage (median and ulnar). The end result is a crippled hand and forearm. In children, growth of the extremity is retarded.

Treatment

PREVENTION is the treatment of choice, and is almost always possible. Supracondylar hu-

meral fractures must be correctly set early (Traction or Operation may be required for this). Acute flexion of the elbow and pressure on the brachial vessels should be avoided if at all possible. The antecubital space should be kept free inside a cast. Elevation of the extremity for several days following injury or operation is advisable.

EMERGENCY TREATMENT, with the primary aim of restoring circulation, must be instituted as soon as the earliest signs or symptoms of vascular complication are recognized. Every injured arm should be examined every few hours for several days. If any symptoms or signs appear, immediate hospitalization is mandatory, and consultation with a specialist is advisable. a. All encircling dressings (especially in the antecubital area) are freed (circular casts are split full-length along the medial and lateral edges, and the two halves are separated). b. The arm is elevated. c. If symptoms and signs are not promptly relieved, emergency operation is indicated. The flexor fascia is split over the length of the muscle bellies and allowed to gape. The vessels are freed. The skin is sutured to assure a closed wound. The fracture is accurately set. Pressure sores are excised and grafted primarily. d. Repeated sympathetic blocks may be of value. e. The wrist and fingers are splinted in full extension and maintained in this position until the muscles have returned to normal.

LATE TREATMENT The difficulty of obtaining a good functional result after the contracture is established, points up the need for preventive treatment. a. Steady (not intermittent) spring or elastic traction to straighten the fingers should be used as long as some improvement is noted therefrom (several months). The traction appliances are removed three or four times daily for active and passive exercises. b. Sympathectomy is often helpful in relieving pain and improving the blood supply. c. Operative reconstruction is ultimately necessary. The flexor fascial compartment is opened fully, the septa are severed, the vessels freed, the fibrotic muscles excised, and the tendons freed and lengthened (This must be repeated with growth in children). The pronator teres and quadratus are severed if necessary to permit supination. The first row of carpal bones may require excision to provide relative lengthening of the tendons. Fusion of the wrist in 20° of dorsiflexion is sometimes indicated to take over the function of the three extensor carpi muscles so that they may be used for transfer.

Obviously, the reconstructive work is complex and requires considerable time and patience. No further word is necessary concerning the need for prevention of this tragic deformity.

EDITORIALS

PERRIN H. LONG, M.D.



EDITOR'S REPORT ON THE KEFAUVER "ANTIBIOTIC" PROCEEDINGS

Since the opening of the hearings by the Antitrust and Monopoly Subcommittee of the Senate Judiciary Committee (The Kefauver Committee), your Editor has followed closely its proceedings. Early in September he spent two days in attendance at the hearings when the subject of the antibiotics was brought to the fore.

To understand these hearings, one must initially become enlightened about certain of the personnel of the Subcommittee, the political aspirations of its Chairman, and the approach to the matters in question by the members (especially the Chairman) of the Subcommittee's Majority. First of all let's take a look at the Senator himself. He was an immaculate fellow during those two hot summer days in his well-pressed blue seersucker suit, his blue shirt, his slightly bluer tie. He was just right for T.V., and did he watch the cameras with his ruddy face taking on senatorial expressions of "concern," "gentle mirth," "deep attention," "anger," "boredom," and "suspicion" as he waved his cigarette holder gracefully or sat in well-posed attentive relaxation. Certainly this was not the coon-skin hat boy! It passed over and over your Editor's mind, "What a hero of the silent films this politician would make!" His two main assistants — counsel and economist — by contrast, and one could not help but wonder if it was not meant to be this way, were rather unkempt looking people in rumpled clothes and certainly both would be more unalluring on television than in the flesh.

But enough of this. How did they present things? The economist would not make a good teacher in our opinion because time after time he bumbled, presenting material as though it was the first time he had seen it and as though he did not know what it really represented. The Majority's counsel was a belligerent, ruffled

individual, well-trained, it would appear, in the use of innuendo. Both, to your Editor, would have been rather pathetic had it not been for the power inherent in their committee positions. Now a little more about the chief actor in this tragedy (because that's what it actually is). He didn't seem to have his lesson well prepared, which meant whispered conferences with counsel and other members of his staff. However, he was brimming over with concern for the "people" (pronounced frequently "peepul"), who had to pay "these prices" for curative and life-saving drugs. *Your Editor could not help but wonder whether Senator Kefauver, when he served as Commissioner of Finance and Taxation in Tennessee, had ever tried to get the small-loan interest rates down so that his constituents would not have to pay exorbitant rates. You see his concern in these hearings for the "peepul" was so great!* Never would he or his staff accept the thought for a moment that the antibiotics, when properly administered, save the patients hundreds of dollars in costs, or even from death itself, over what would have happened had they had the same disease twenty-five years ago.

Well, let's drop personalities for the time being and take up these hearings. Ostensibly, this was to be an *impartial* inquiry concerning pharmaceutical trade practices and prices. But it turned out as one could be sure of from the first to be an extremely biased and senseless attack on an industry which is intimately concerned with the welfare and survival of the American people. Your Editor is pretty well informed about this industry and its practices as a result of being a member of the Council on Drugs (formerly the Council on Pharmacy and Chemistry) of the American Medical Association from 1939 to 1960. He avers that the Subcommittee Chairman, Senator Kefauver, has permitted malicious statements to be made, half-truths to be spoken, slanted evidence to be presented, misleading statistics to be entered into the record, and even slanders to be perpetrated by his own staff, and by a parade of witnesses, many of whom were disgruntled ex-employees of the industry (in one instance of the F.D.A.), well-known medical publicity seekers, jealous minor competitors, fuzzy-minded, ivory-tower academicians, and by individuals who from their testimony appeared deep in their hearts to wish to destroy the American system of a freely competitive industry. To be sure, certain well-known emotionally-stable specialists such as Dowling, Meleney and Finland testified in the antibiotic hearings and *in general* their remarks, which pointed up their own views, can be considered as acceptable. Dr. Dowling's testimony that he would like to see but one "brand" or trademarked name for a drug will be discussed later. As a member of the Council on Drugs, he is in the position to initiate the steps which would be necessary to permit only the first brand name to be considered acceptable for advertising in the publications of the A.M.A. This would have essentially the effect of a Federal regulation in the long run as it would be copied by many journals. With certain exceptions, the Subcommittee's witnesses, like its counsel and economist, were rather pathetic individuals with whom it appeared life had not dealt too gently and who had a bone to pick with the world.

The shooting, if one may call it that, dealt with the matter of prices of drugs and profits derived from antibiotics. It has been known for years that the major companies net from five to fifteen percent yearly on their net sales. However, due to the intense competition and other factors (as for example during the chloramphenicol scare several years ago) net profits may drop by fifty percent or more with astonishing rapidity. It not only takes a top-flight sales organization but also a bang-up research group actively engaged in basic scientific work to keep income at a level which permits of research, development, and educational programs (a lot of money is spent for these) by the drug companies. Then it must be remembered by all medical people (apparently this has completely slipped the well-dressed Senator's mind), that to stay in business, to develop and expand, and to be of real benefit to the people it serves, a pharmaceutical com-

pany must make money. It has stock holders who expect a fair return on their investments (actually their returns in dividends have been low compared to the market value of their securities lately), and if they don't get it, they get rid of the management, or their holdings.

Your Editor believes that every thinking physician will agree that antibiotics, when used properly, are curative and/or life saving and that the savings in costs of illness which their use has brought about, make them cheap in comparison with the situation relative to the costs of having infectious diseases which existed in this country twenty-five or more years ago. Nothing more will be said on this point.

Another part of these hearings was devoted to the "evils" of multiple brand names for the same drug. Well, here the Subcommittee's research group certainly didn't look very far, and the witnesses discussing brand names were either very forgetful or were historically poorly informed. These are the facts. Up until shortly after World War II, it was the policy of the American Medical Association, insofar as advertising was concerned in their Journals (almost all State Journals and certain others followed this A.M.A. policy), to permit the discoverer of a new drug to coin a brand or trademarked name for it and to advertise it under the selected brand name. All other advertisers, if they wanted to use A.M.A. publications for advertising the same product were required to use the *generic name* for the new product. *This then in essence gave the discoverer or inventor of the drug a monopoly as far as brand-name advertising in the total market was concerned.*

Not too long after World War II, certain members of the Council on Pharmacy and Chemistry came to the conclusion that this policy of permitting but one brand-name product to be advertised was restrictive, produced a monopoly, reduced competition, and, possibly, it might involve the Association in certain legal proceedings. After much study and careful thought, the Council recommended to the Trustees of the A.M.A. that the restriction forbidding the use of multiple brand names in advertising in the Association's Journals be removed. After proper consideration, the Association adopted this recommendation. To your Editor, it is incredible that the Antitrust and Monopoly Subcommittee should look so askance at a situation which was designed to break up monopolies relative to drugs and, in our opinion, successfully did so.

Several competent witnesses have suggested that the determination of the efficacy of new drugs and the claims which are made for their use should be passed upon by the Food and Drug Administration. Here again memories are short. Until a very few years ago, the then Council on Pharmacy and Chemistry, using its "Seal of Acceptance" rules as a threat, required that every piece of advertising material and every package insert to be submitted to it for scrutiny relative to the claim made for the advertised product. These were carefully studied by the Council referee and his consultants and the claims either allowed or disallowed. As this covered all advertising whether in publications of the A.M.A. or others, it was effective. But here again, the question was raised as to whether the "Seal of Acceptance" of the Council might not be considered as restrictive and monopolistic and, after a very careful and prolonged legal study of the situation, the use of the Seal was abandoned. The American Medical Association's business office still uses the Council as a decisive body when any questions arise about advertising material. Here again a number of witnesses suggested that a Federal Agency be invested with powers which learned legal talent had considered as being "monopolistic" and "restrictive," if exercised by the American Medical Association. How unclear thinking can become!

Finally, a few words should be said about the attacks made during the Subcommittee's hearings on the role of the so-called detail men. Your Editor has a considerable understanding and knowledge of this group as his son was a detail man for two or three years for one of our leading pharmaceutical manufacturers. He has never knowingly turned a detail man away from his door. They almost always have some-

thing worthwhile to say. He is also very much interested in studying them and he considers that they fill a most useful role. Who are these people? Well, most of them are college graduates and some even had education in the basic medical sciences. What do they do? They serve several functions. First, they keep the physician informed of new products of their company and of new developments relative to established products. Secondly, they provide physicians with new products (samples) and with all types of literature dealing with their company's products. Thirdly, they receive and transmit information about their products from physicians to the medical and/or research departments of their companies, thus helping to add to the general fund of information about the products. Fourthly, as the intermediaries between their companies' research and clinical departments and the doctors, they are in a position to find most of the answers to questions raised by the doctors about their companies' products. Fifthly, certain detail men perform a very useful service in making it possible for physicians to carry out clinical research on their products by arranging for grants-in-aid facilities and material for clinical investigation.

Are these medical representatives or "detail" men salesmen? The answer is, of course they are — but not in the usual sense. You can't buy ethical drugs from them. They are not like the Fuller Brush man who shows you the brushes, takes your order, delivers your brushes, and collects your money. A good detail man keeps his doctors completely informed about his company's products, answers questions, or tries to find the answers, provides all types of service day and night relative to his products, and by his personality, knowledge, and dedication to service to his doctors does his level best to have them use his company's products rather than those of a competitor. As your Editor has seen them over the past thirty years, they are an interesting and very useful group of men.

In conclusion, no better summation of these hearings to date can be made than was recently printed in *Barron's* (Vol. XL, No. 37, September 12, 1960) in an editorial entitled *"Remedy or Disease? The U. S. Should Reject the Drug Investigation,"* in which it is stated relative to the hearings of the Kefauver Committee: "As a consequence (of the hearings), with respect to an industry which has contributed so much to its welfare, the nation stands in peril of swallowing a poisonous brew of misleading statistics, half-truths, and slander . . . the Kefauver investigation is not only mischievous but potentially harmful. For to judge by the actions of its chairman, its findings are designed to pave the way for greater federal control over the manufacture and distribution of drugs, possibly including so-called reforms in patent and licensing laws. Such far-reaching changes . . . might easily impede, if not destroy" the remarkable progress of the pharmaceutical industry. "Here, in truth," *Barron's* continues, "looms a cure that is infinitely worse than the imaginary disease. Political quackery may make headlines and, perish the thought, even national policy. It can never serve the general welfare." To all of this your Editor would like to add, *"Watch out Doctor, you may soon be next on the Senator's list! Right after the bakers! They are next on his list!"*

WHAT'S YOUR DIAGNOSIS?

Read the film and compare your findings with those of a top radiologist.

SEE PAGE 33a





Remember When...?

The dissecting room of a medical school looked like this?

A Basic Science Professor (and even some in clinical fields) always sported a Van Dyke beard? It was the badge of his profession.

Medical and dental students who were taking gross anatomy wore "academic caps," leather aprons and arm guards, after the European custom? (Note the long hair and winged-collars.)

Professor Rufus Weaver of Hahnemann Medical School frequently demonstrated the gross dissection to his students in Philadelphia? (This picture was taken around 1900.)

Life was obviously much more simple and calm than it is today?

Photo: Courtesy of
Dr. Armond L. Ruderman
Trenton, N. J.



THE LONG AND SHORT OF IT

From Your Editor's Travels and Reading

THE DARTMOUTH CONVOCATION ON THE GREAT ISSUES OF CONSCIENCE IN MODERN MEDICINE (Part Two)

Next Sir Charles (C.P.) Snow entered the discussion stating that biological (sexual) motivation was a major factor in motivating the movement of people to cities. What young man or young woman enjoys being restricted to a choice between three or four of the opposite sex as occurs in villages? He shifted his focus then to the observation that in the past we have been telling the underprivileged countries (the "East" as he called it) what to do, when actually we should have let the requests for help come from them if we desired to function most adequately.

Then Dr. Dubos got up and to add to the existing confusion inferred that the facts do not exist to permit of an objective discussion of the population explosion! Well, this remark rather rocked everyone, because certainly facts dealing with economics, social views, sanitary measures, war, religion, personal orientation, and the advances in medical technology do influence changes, up and down, in word population. He did point out that one question which might be studied profitably would be to find out what human beings want to do with their lives relative to having children. He pointed out that in the thirties (depression period), a survey of Scarsdale, N. Y. indicated that the average family desired two children, while recently (prosperity with inflation), a similar survey in the same city, showed that comparable families desired five children. (To this your Editor can only comment, "Good Heavens!")

The first speaker at the Evening Assembly, Mahomedali C. Chagla, spoke on the problems faced by India which are associated with its rapidly expanding population. His was a factual and moving discourse. India has four hundred million people. The average per capita income which amounts to $2,100 per year in the U.S.A., reaches only $60 a year in India. Poverty, squalor, ignorance, and low standards of living are the rule. As was pointed out, "People will turn to totalitarian methods if they are driven to poverty and if they can find no relief by adhering to free and democratic institutions." India he said, has maintained about the same birth rate, but, due primarily to sanitary and certain preventive medical measures, the death rate has dropped sharply. As he put it, "we have been suffering from the civilizing effects of science and medical research. Civilization has shown us how to reduce our death rate but so far has failed to point the way to a controlled population. I think this is one of the most important issues of conscience in modern medicine. Medicine must advance on both fronts. If it considers life is sacred and everything must be done to

prolong it, it must also prevent human beings from being born into an existence of poverty, destitution and frustration. The sanctity of life demands that the dignity of the individual must be upheld. *What dignity will millions of children have who are being born today?* (Italics ours, Ed.) This country [U.S.A.] has fought a ceaseless war against diseases in different parts of the world. There are national institutes of health and other organizations which are carrying on unceasing research in cancer, malaria, typhoid and other fell diseases which the human flesh is heir to. But the Government and official institutions fight shy of doing research on the problem of human fertility. Why? To my mind, increasing population is a more terrible sickness from which a country can suffer than the diseases with which medical science is presently concerned. Cancer or malaria can only kill the body. When you have unwanted children, when you have children you cannot feed or clothe or educate, you maim the soul—you leave a scar which destroys equanimity of mind and twists and distorts the human personality. I have heard it being said that this country should remain neutral on the question of . . . family planning in a foreign country. I have no desire to interfere in the domestic policy of this country . . . But this is something that concerns the whole world . . . I am sure that if it is once realized that the increase in population is a grave menace facing the world, then this country will also realize this menace must be fought on a global basis . . . I would like to say a word about the ethical or moral aspects of the problem. To my mind morality consists of giving the least pain to fellow human beings and contributing to the largest extent to their well-being . . . Applying this text, I think you are causing more misery and suffering to untold millions by denying a knowledge of birth control technique than by doing everything possible to bring home to the people of this country the vital urgency of the problem of population explosition which is facing the world . . . I would rather prevent life than bring into existence children who do not and cannot live as human beings and who are a scandal both to Providence and to man." The Ambassador then went on to outline what India had done to meet this problem. But how pitifully short she was of reaching the desired goal. He concluded his talk by saying, "We have to fight poverty in India on two fronts—on the economic front by industrialization and on the population front by ways and means for reducing the birth rate. America has given us generous aid to carry on the fight on the first front. We want your great scientific, technical and medical knowledge and experience to wage an equally effective war on the second front. It's only when the conscience of the people has been aroused that the war will be successfully waged." The applause which greeted the end of the Ambassador's discourse was not equalled before or later in the Convocation! It was overwhelming in its volume and time.

The second speaker of the evening session was Aldous Huxley, who has been in the forefront of those concerned with the developing population explosion, and who obviously was the drawing-card of the Convocation. His theme was built around the question of *"Quantity Versus Quality"* a topic which should be of great interest to all concerned with the future of medical care and of this country. (See editorial, "On the Quantity and Quality of Life," MEDICAL TIMES, May 1960.)

Mr. Huxley developed his theme by pointing out that "it took 1600 years for the 259 millions inhabiting the planet in 1 A.D. to double their numbers. It will take just 40 years for the 2.9 billions of 1960 to become 6 billions." The reason for this, normal or higher birth rates, with sharp drops in the death rates in those categories of disease which formerly slew millions in childhood, and from adulthood through middle age. We can ask what the effects of this explosion may be for us. Well it will mean that our standard of living will not rise rapidly. Also, the quality of living may be affected. Children will be brought up completely out of touch with the nature of the supercities." Public beaches, National Parks, resort areas, wild-life sanctuaries, etc., will be grossly overcrowded. As a result of our enor-

mous consumption, we will become a "Have Not" country, especially in respect to high-grade ores, consequently dependent for its existence as an industrial community on imports from abroad. This will probably affect our foreign policy, because we will have to have close relations with those countries which supply us. Ours will be the fate of a highly industrial nation. In underdeveloped countries, the "explosion" will, because of a lack of money, skill and trained personnel, produce intense nationalism and a trend towards totalitarianism. (This is already becoming very evident in Ghana, Guinea, and the former Belgian Congo.) Frustrations will be great, as the attempt to counterbalance the excess of population by hard work will not be effective. Poverty and bad governments will move hand in hand towards the standards of Communism. In the backward countries, military machines will be developed, and the Cold War intensified. Russia and Red China will be contesting the United States all over the world!

The question is whether anything can be done about it. Huxley asked the question, "What are the humane and rational substitutes for Nature's methods of dealing with overpopulation—namely, famine, pestilence and (in human societies) war?" He believes that "two courses are open to us. Both must be pursued simultaneously." We must increase the production of industrial goods and food all over the world. This is feasible. Secondly, we must do something to control birth rates so they come into balance with death rates. This will be difficult, Huxley said, if not almost impossible. There are major obstacles. "Chemical, medical, sociological, psychological, educational, and in some quarters theological." Currently no birth control method is cheap and easy to use. The "Pill" which can be easily and cheaply used by hundreds of millions of people has not been invented. Even if we had it tomorrow Huxley pointed out that the population problem would be very grave. An immediate drop of twenty percent in births would mean that a vast number of children would still be born. He concluded by saying, "While *a national population policy internationally agreed upon, would not bring an immediate solution to our problems, it must nevertheless be adopted. If it is not, our grandchildren and great grandchildren will be in for the worst time of troubles ever faced by the human race. Increasing quantity will result in deteriorating quality of living, and most of the world will sink into abysmal squalor and chronic warfare.*" (Italics ours, Ed.)

This is the dismal future as predicted by Mr. Huxley. Naturally, his remarks, though somewhat lengthy and repetitive, received close attention and were vigorously applauded. However, to your Editor's ear, the applause was not as forceful nor as sustained as that for Ambassador Chagla.

On the final morning of the Convocation, the topic for discussion by a panel was "The Issues Involved in Influencing the Mind." The chairman of this panel, Professor Ralph W. Gerard, opened the discussion by saying brainwise, man really differed little from animals. What makes the difference is the mind. He went on to say that science is not ethically neutral. It has something to say about the ends themselves. He postulated that in a sense, with the development of "supercities," we must develop a race of supermen who will be able to get along with themselves under the conditions which will exist in these massive aggregations of population.

Dr. Wilder Penfield then spoke up inquiring whether "the roar of the waterfall or doom" is not becoming distinctly audible. He pointed out that excesses of all types (including population) should be our national concern. He then launched into a discussion of the mind. Consciousness, he stated, means activity of the mind. As far as brainwashing is concerned, its technique is no more scientific than that of torture or solitary confinement. Furthermore, hypnosis and subliminal activity produce no lasting effects on the mind. To date Dr. Penfield said, science has provided no method of controlling the mind. One cannot force the mind to do your bidding, or the person who owns it. He believes that the innate kindliness

of man holds great hope for the future. Art of and religion in medicine play a real role. The Art with its ethics has a peculiar meaning and The Hippocratic Oath itself is an indenture. He concluded by saying that study of the brain had not explained the mind, and that in his opinion *men must love their fellow men or be destroyed. This only can save this muddled generation from rushing on to destruction.* (Italics ours, Ed.)

Dr. Sandor Rado next spoke on the fascinating topic of "Rage, Violence and Conscience." In his words, "Today, a fit of rage may terminate civilization. Rage is the enemy of civilized man . . . contemporary society must . . . tame rage, check . . . violence . . . and . . . develop machinery for making the moral code effective . . . we call the components of this organic machinery the mechanisms of conscience . . . Medically speaking, conscience may be defined as an organization of self-restraining and facilitating mechanisms concerned with the regulation of human conduct. These mechanisms stem from the organism's basic orientation towards repeating pleasant experiences and avoiding painful ones."

The speaker pointed out that the "fear of inescapable punishment" was in part a bolster of conscience, especially in the developmental period. However, retroflexed rage dominating conscience is dangerous. He said, "guilty fear and the purely emotional repair work of expiation have little value in adult life. The rational response to one's wrongdoing is to apologize, pay damages, and be satisfied with learning one's lesson for good . . . Rage is an open threat to the survival of the species. Retroflexed rage, by means of which 'traditionally' organized conscience operates, is an insidious threat to the health and life of the individual.

In order to prevail against these threats, maximal research effort should be made towards reducing the strength of rage to manageable levels, and to improving the traditional organization of the conscience."

Discussion was opened by Sir Charles Snow who observed that conscience has an inhibitory meaning and unless there is great drive, conscience may render one impotent in various ways. Mr. Huxley brought out the point that we could learn much from the ancient Greeks on how to treat rage and frustration by physical and muscular therapy. He told of witnessing frustrated, poverty-stricken, Brazilian Negroes dancing all night in Bahia to work off their tensions. He felt that psycho-physical methods of controlling rage should be more carefully evaluated. Then Sir Charles, with a wicked sparkle in his eye, opined that rage was an occupational disability of people who have drive, i.e., world figures, big businessmen, prima donnas, etc.; the type which are always "hitting the ceiling." Dr. McDermott then observed that Surgeons used to be notable for their rages in the operating room, but that now this doesn't occur. (It could be wondered, how many operating rooms he has been in lately.) Dr. Brock Chisholm then thought out loud about how much imagination has been crippled by too rigid internalized conscience control, i.e., that one way of thinking is "good," the other way "bad." He pointed out that one must not confuse thinking with behavior and that the imagination must be limbered up or it cannot be used fully. Mr. Warren Weaver then raised the question of extra-sensory perception, stating that, in respect to it, he cannot reject the evidence, but he cannot accept the conclusions. What then is the effect of mind on mind? He pointed out that the statistical evidence for the 25 card extra-sensory perception experiment is thousands of times more impressive, than is the evidence that smoking causes lung cancer. Professor Gerard ruled extra-sensory perception summarily out of the discussion remarking, that people have extra senses. Dr. Penfield closed the discussion by stating that as yet science has not explained these matters by which men live and that, in living, Religion had given leadership, while Science had given none.

The Honorary Degree Assembly, held to the tunes of bagpipes, took place the last afternoon. Degrees were awarded to Sir Charles Snow, Sir George Pickering, Dr. Brock Chis-

holm, Aldous Huxley, Ambassador Chagla, and Dr. Wilder Penfield. Sir Charles Snow was the Speaker of the occasion and, in his address, he reviewed the problems discussed at the Convocation sessions, notably those dealing with atomic fallout, overpopulation, and the genetic quality of the human race. Sir Charles was positive that "the new dangers are very real and will require for their solution all of our intelligence and guts." He pointed out that one of the major concepts developed in the Convocation was that "medical conscience is no longer exercised solely within the private domain of the doctor-patient relationship but is being extended into the broader field of public action through what is coming to be known as statistical morality." He stated that "It is clear, however, that some eugenic measures being proposed would be extremely difficult to put into effect in a free society."



"PREMATURE" CHILDREN AT PRIMARY SCHOOLS

In a national study of the mental ability and primary-school progress of "premature" children, a number of striking handicaps were found, which were later shown to be of environmental origin rather than the result of low birth weight per se. The preliminary findings were that premature children: (a) made consistently lower scores than their matched controls in eight tests of mental ability and school achievement (four given at 8 years and four at 11 years); (b) were the subject of more adverse comment than their controls by their teachers in respect of their attitude to work, power of concentration, and discipline in class; (c) were less than half as likely as their controls to gain grammar-school places in the 11+ selection examination.

These differences are largely explained by the fact that premature birth is not only associated with poor living conditions but also, at each social level, with low standards of maternal care and lack of educational interest.

This study casts doubt on the utility of the method of controlled comparisons in socio-medical studies.

J. S. B. DOUGLAS, B.M., B.SC.

The Brit. Med. J. (1960) No. 5178, Pp. 1008-1013.



Because of his position in the community, the physician can not afford to be indiscreet in what he writes or says about another person. A law suit can result from loose language.

Watch Your Language, Doctor

HAROLD J. ASHE, Beaumont, California

A physician's careless use of certain words and phrases, either in speaking or writing, may result in a lawsuit for recovery of damages for slander or libel.

Such words and phrases may be indiscreetly used to characterize patients, friends, acquaintances, strangers or enemies. Libelous or slanderous words may be no less dangerous if expressed outside the practice than in it.

Few slander or libel suits are brought unless the defendant is financially able to pay any damages that may be awarded. Thus physicians generally are vulnerable and under greater pressure to guard against intemperate and ill-advised remarks than many others in their community. Only those who lack resources, are judgment-proof and therefore can afford to be slack-jawed.

Do-It-Yourself Collections

A physician is not usually schooled in the legal niceties of collection procedures. There are times when he may be tempted to use an unorthodox method to collect a delinquent account. He may be provoked beyond endurance by the knowledge that certain patients are able to pay, but don't. He may disregard his natural caution in the belief that the end justifies the means. Personalities may creep into a situation. Lack of vigilance may trigger a damage action that could easily have been avoided.

Debtor Rights

Even if a patient fails to honor his obligations, this does not reduce certain of his rights. A good many creditors assume the contrary to be the case, and to their financial undoing. There may be a considerable body of evidence indicating a debtor is a deadbeat, but it is a rash creditor who will characterize the debtor as such. A patient may be a crook and a rascal, but to so dub him is to invite legal trouble.

A fine line separates legitimate collection processes from those of harassment. If a debtor's health is adversely affected, this may lay the grounds for a law suit.

A physician may be satisfied he's dealing with a sharpy. He may feel this justifies sharp collection procedures. It does not. In recent years, many states have passed legislation curbing unethical collection practices. By interpretation, more and more courts are restricting the actions of creditors in how they may press for collection. The Federal government frowns on misusing the mails to effect collection.

A physician ordinarily stands little chance of being sued because of efforts to collect for professional services. Usually, routine methods

suffice and, if they do not, he may turn accounts over to a collection agency serving the profession. Therefore, at first glance, the risk may appear so slight as to hardly warrant discussion. This ignores the human element. Sooner or later, a physician may be provoked by a particular situation, perhaps one in which a combination of circumstances are involved. The outstanding account may only be incidental.

Without due thought, a physician may confront a delinquent patient in person or write him a sharp letter. Or in a moment of whimsy, he may compose what he thinks is a "cute" note calculated to get a response from an indifferent debtor.

To illustrate how an incautious creditor can get involved in a disastrous lawsuit because of a so-called clever note, consider the following true case. A creditor, in exasperation at his inability to collect a small bill, sent a postcard to the debtor which read:

"Dear John, Will be in town next week. Call me at 5684. Love, Mary."

This was calculated to get a response. It did. Suit was brought for $25,000 damages. The trial brought out the following facts:

The debtor, prior to receipt of the postcard, was happily married, the father of two children. On receipt of the postcard, the message was read by the plaintiff's wife. She demanded an explanation. He was unable to give any. She left him. Then the plaintiff called the number and the defendant in the suit answered. He said the card was just his way of contacting the debtor about his account.

However, the debtor's wife had become distrustful and suspicious of her husband ever since, according to the plaintiff. She had left him on several occasions. The court awarded the plaintiff $5,000 plus court costs. The debt involved an unpaid balance of $4!

A creditor may be tempted to use defamatory language in the hope it will anger a debtor so he'll pay. It rarely accomplishes this purpose. It may lay the basis for a slander or libel suit.

In the choice of language, a creditor does not have special privileges denied others. A word or phrase is slanderous or libelous, in itself, if it tends to degrade, disgrace or hold up a person to contempt or ridicule.

Words and phrases used to characterize a person, debtor or not, which may form the basis of a slander or libel suit, include charges of embezzlement, blackmail, extortion, false pretenses, swindler, crook, dead-beat and robber, as well as their synonyms and other equally defamatory terms.

It is dangerous to cast aspersions on a person's business ability or his professional skill or to question his honesty or morals. Implying or saying that a person is bankrupt or on the verge of it, or otherwise impairing his credit status is also unwise. This last had best be left to a credit-reporting agency.

What Is Slander?

Derogatory remarks may be written or oral. If oral, they may lay the basis for a slander suit; if written, a libel suit. In the case of slander, the remarks must be uttered within the hearing of a third person to lay the basis for damages.

In a libel suit, the remarks must be "published." However, the term "published" has a broad meaning in law, and it is not solely the concern of publishers and editors. The sending of a telegram has been ruled "publication." This is because a third person, the one taking or sending the message, must have read it. Dictated letters have been ruled "publications" because the stenographer had to read the communication in writing it.

Even if a person writes the letter himself, the communication may be published and be actionable if it can be shown the writer had reason to believe the communication would be opened and read by a third person. It is not actionable if the person to whom the letter is addressed opens it first and passes it along to a third person.

Most of these collection devices are foreign to the practice of physicians. They are outlined here to underscore the fact there are certain definite rules of conduct in collecting bills. *Even if these rules are violated only once, that*

one time may lay the basis for a damage suit. Precisely because physicians ordinarily confine collections to highly ethical methods they are vulnerable when they set such methods aside.

Form Letters

Physicians may be solicited to purchase and use form collection letters or stickers to be attached to statements. If such letters are used they should be carefully scrutinized for libelous matter. Most suppliers are careful. However, in at least one case, a set of form letters was found to be libelous.

It is risky to demand payment on threat of bankruptcy proceedings or criminal prosecution. Courts may interpret this as extortion.

Physical force is never justified in collecting a debt, and it is doubtful any physician would ever resort to this, no matter how great the provocation. However, there are refined forms of harassment which may result in physical illness or mental suffering. Courts, in increasing numbers, are taking judicial notice of harassment as a device to effect collections. One court pointed out that creditors "should refrain from conduct intended or likely to cause physical illness."

Non-Practice Actions

The danger of becoming involved in a libel or slander action is not confined to collection practices. In fact, outside the practice a physician may be much more vulnerable, if for no other reason than that he is less discreet. A tight curb needs to be kept on one's tongue at all times, and under all circumstances, lest a physician give voice to an opinion that proves slanderous.

So-called idle gossip may not be so idle, if it results in injury and damage to its victim. Rumor, when put to the test in a court action, may be just that. Too late, a defendant may discover that the truth of this slanderous remark is the only defense.

A physician may lower his guard among friends and close acquaintances, making ill-advised comments on certain individuals. He may do this thoughtlessly, and without any intention of doing injury to another. Nevertheless, the injury may be real and the damage may be irreparable.

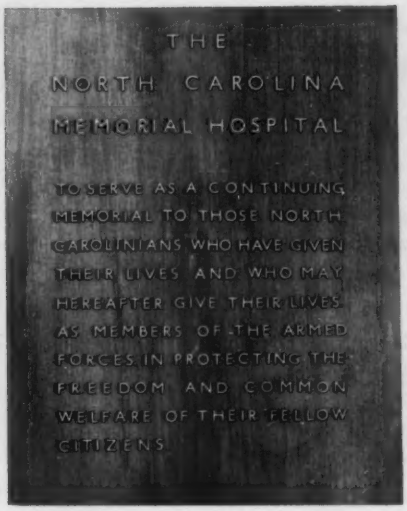
A garage may have done less than a perfect repair job on a physician's car. He may have just cause for complaint. But he's treading dangerous ground if he tells others that the garage owner is a "robber" or "crook." Legally, these words have precise meanings.

It may be advisable for a physician to alert his wife as to the danger of a libel or slander action. She has the same stake in this as does her husband.

Bridge parties are a likely focal point for tidbits of gossip, much of it far from harmless. There may be an open season on local tradesmen. This can be a dangerous pastime for those so engaged and particularly for those wives whose husbands are worth suing.

In guarding against the danger of a slander or libel suit, it is a good rule to credit others with the same good intentions and integrity you claim for yourself. This is a sound safeguard even if a physician feels he must make certain mental reservations. It is at the point of oral or written declaration to the contrary when a damage action is likely to result.

P. O. Drawer 307





University of North Carolina

The oldest state university in the nation began its program of medical education way back in 1879 and today boasts one of the most modern physical plants available.

It was in 1879, three years before Koch discovered the tubercle bacillus and long before most universities recognized their obligations in the field of health, that the University of North Carolina began its program of medical education.

At first, the fledgling School of Medicine offered only a course in theoretical and practical medicine in line with the preceptorial system of medical education then in vogue.

Gradually, the School expanded, paralleling the development of North Carolina as a State and of the University as a leader of higher education in the South. The University of North Carolina, the oldest state university in the nation, (1795) could well assume this expanding responsibility.

Yet, in 1910, about the time that Abraham Flexner made his monumental study of this country's medical schools, the University thoughtfully dropped the clinical years and concentrated on offering a sound and nationally recognized two year program in the basic sciences. Consequently, from 1911 to 1952, the School of Medicine offered this limited curriculum at Chapel Hill and its students were transferred to the leading four-year schools of medicine throughout the nation for the completion of their medical training. Approximately 25 percent of the physicians now in active practice in North Carolina received their preclinical years of professional training at this University.

The stimulus for the return to a full four year curriculum dates back to 1944 when the medical and civic leaders of the State brought forth the "Good Health Movement" with its slogan of "More Doctors, More Hospitals and



Medical Center

More Insurance." Dean W. Reece Berryhill of the School of Medicine was among those visionaries who sparked this far-reaching program.

As a result of this highly organized campaign, extensive studies and surveys were made by local and national committees, all culminating in 1947 when the State established the 400-bed North Carolina Memorial Hospital. Subsequent funds provided for the enlargement of the Medical School Building, a new School of Nursing, School of Dentistry, 54-bed Psychiatric Center, 100-bed Tuberculosis and Chest Disease Hospital, and for residence halls for nurses and for the resident staff.

This authorized expansion was designed not only to re-establish at Chapel Hill a full four year curriculum in medicine, but also to create within the University the educational facilities necessary to train needed health personnel in all categories which were, with some literary license, lumped into the "More Doctors" part of the campaign slogan.

Health Affairs

These decisions created at the University of North Carolina, one of the five truly complete medical centers in this country having all major professional schools. The School of Medicine, Nursing, Dentistry, Pharmacy, and Public Health, along with the North Carolina Memorial Hospital and a library, are organized as a Division of Health Affairs within the University's academic structure. The library, located in the Clinic Building, contains approximately 65,000 volumes and receives regularly 1,100 domestic and foreign medical and scientific journals.

The Hospital is an integral part of the School of Medicine. Its director, Robert R. Cadmus, M.D., also serves as chairman of the Department of Hospital Administration. Because of this administrative organization, the Hospital maintains an intimate relationship to the program of medical education. Chapel Hill being a small college town would in itself not require a hospital of the size and complexity of the



YOUNG AND OLD Tender loving care, vital ingredient of hospital program, is enhanced by the thousands of hours given by volunteers. Below, patient nearing century mark shares advantages of Memorial's modern facilities.



North Carolina Memorial. Actually, in neighboring Durham, only 10 miles away, there are more than 1,500 excellent general medical and surgical beds including the Duke University Hospital.

Facilities

However, the North Carolina Memorial Hospital came into existence primarily as the clinical laboratory for the School of Medicine, and as a referral center for all of North Carolina. The referral basis for admission brings a broad range of interesting pathological conditions which in turn speeds up the tempo of care since these complex clinical problems require unusually heavy diagnostic and therapeutic procedures. The local neighborhood adds sufficient community-type diagnoses to create a balance on all clinical services.

North Carolina Memorial Hospital was appropriately designated the State's memorial to its war dead—a living memorial to their sacrifice. Construction was begun in 1949 and the first patients were admitted on September 2, 1952. Simultaneously, the School of Medicine once more admitted a third-year class and in 1954 granted the M.D. degree.

The building currently has 384 beds, 70 percent assigned to the staff services, the remainder being reserved for private patients. Last year some 10,281 admissions were recorded.

Ambulant Care

Considerable emphasis is given to ambulatory and home care programs. There is an active staff outpatient department, organized around a General Clinic, originally aided by a grant from the Commonwealth Fund, which cuts across the usual departmental lines to offer comprehensive care to the ambulant patient.

The private patient service is organized to offer similar ambulatory care to the individual desiring a private physician. An Intermediate Clinic in pediatrics and in obstetrics, staffed primarily by residents but operated like private practice, handles dependents of students and house officers. A large Psychiatric Clinic in

separate quarters handles this special group of patients using many traditional, as well as experimental, techniques. An active emergency ward brings the total ambulatory visits to well over 116,000 a year.

The Home Care Program is, of course, restricted to the immediate local area and is organized primarily as an education experience.

The Hospital maintains every professional and subprofessional department listed by the American Hospital Association and is approved by the Joint Commission on Accreditation of Hospitals. The blood bank is one of two such facilities in North Carolina licensed by the National Institutes of Health to ship blood and plasma across state boundaries. Hospital departments such as pharmacy, social service, clinical psychology, physical therapy, and the clinical laboratories are also integrated with academic programs in these professional specialties. The total hospital operation is staffed by 900 paid employees, exclusive of students and attending physicians.

Faculty

The Basic Science Faculty of the School of Medicine exceeds 70 full-time individuals, housed in the School's Basic Science Building adjacent and connected to the North Carolina Memorial Hospital. The Clinical Faculty numbers 235 members. Although 133 are part-time staff members from throughout the State who participate in various teaching exercises, the senior attending staff of 102 is on a full-time geographical basis.

There is no courtesy staff; all physicians admitting patients to the North Carolina Memorial Hospital are members of the Faculty of Medicine. Consequently, student and house staff teaching is conducted by academically oriented physicians.

Research is supported by Faculty research grants totaling over $1 million dollars a year in all phases of basic science and clinical research, plus $600,000 annually received in grant support of special teaching and training programs. This year, research grants are divided among 159 identifiable projects.



PLEASANT INTERLUDE Welcome break from hospital routine is given these youngsters at impromptu lawn party.

Hemophilia

Of interest (because of the "Symposium on Coagulation Disorders" presented separately in this issue of MEDICAL TIMES) is our Hemophilic Dog Colony which is unique in this country. The Department of Pathology maintains an inbred strain of dogs with hemophilia which has been kept as a pure colony for many years. A new Blood Research Laboratory has recently been constructed with financial help from the Hemo-Cardiac Foundation, The Hemophilia Research Foundation and the United States Public Health Service to continue this valuable animal and clinical experiment. Since the medical care program is interrelated with the research and educational program, the house officers and medical students are not only close to, but often participate in, many of these projects.

Because of the receipt of a recent National Institutes of Health Research grant entitled: "Improving Hospital-Physician Relations Through Education," the North Carolina Memorial Hospital will become a center for objective investigation of this sensitive professional relationship.



READING AND REFERENCE N. C. Memorial's library provides house staffers with an opportunity to study in comfortable surroundings. Shown here is a section of the library's large reading room.

The parade of nationally and internationally recognized individuals and members of "travel clubs" who are attracted to Chapel Hill because of research projects, speaking engagements, or participation in formal or informal service or educational programs reads like a "Medical Who's Who." Indeed, the North Carolina Memorial Hospital stands on one of the busy medical corners of the southeast.

Progressive Patient Care

North Carolina Hospital has three of the elements of progressive patient care—intensive care, intermediate care and home care—and is actively studying the self-care and chronic care concepts. These developments have come as a result of the Hospitals' emphasis on referral type patients.

Having a "sicker house" than the average hospital, or even the typical teaching hospital, presents certain problems and offers certain opportunities.

In 1953, the North Carolina Memorial Hospital, in order to better handle the more seriously ill patients, pioneered the concept of a special care or intensive care unit and was the first hospital to report this type of practice in the hospital literature. Currently, a new 32-bed Special Care Unit is being remodeled. The same broad concepts of progressive patient care have been carried into the Premature Nursery which is in reality a special care unit for newborn infants. To this unit are admitted not only those infants who by definition are premature, either by period of gestation or by birth weight, but also infants requiring replacement transfusions, surgery for congenital defects, and other medical or surgical complications in the immediate neonatal period. Infants born with oral clefts often undergo surgical repair within the first few hours of life and are shown to the mother only after the repair has been completed. Rehabilitation has been an active part of the program, stimulated in part by a generous grant from the National Foundation for Infantile Paralysis.

The admission of psychiatric inpatients has been an important part of the NCMH program from the very beginning. A separate wing known as the Psychiatric Center has accommodations for 54 inpatients plus large outpatient facilities. The program of this Center is closely allied with that of the mental hospitals of the State of North Carolina and accordingly, service, research, and undergraduate and postgraduate educational programs are integrated. This has had a dramatic effect on upgrading the quality of care in the custodial institutions for psychiatric patients.

A similar arrangement exists with the 100-bed Gravely Tuberculosis Hospital which is connected to the North Carolina Memorial Hospital by tunnel but which, administratively, is a branch of the State Tuberculosis System. The North Carolina Memorial Hospital provides surgical, laboratory, and other facilities

for this group of specialized patients and, in turn, they are used for medical education. The medical Faculty serve as attending physicians to this closely integrated institution.

Research

The Research Triangle of North Carolina is a scientific organization offering to research-minded industry a unique location for research facilities. It offers a research park geographically located in the center of an outstanding academic triangle, bounded by North Carolina State College in Raleigh, Duke University in Durham, and the University of North Carolina at Chapel Hill. This brings a large group of research and scientific oriented individuals to the immediate area who, in turn, use cooperatively the academic talent of the universities.

A Univac 1105 Research Computer Center has recently been installed at the University and offers computer potential to the campus and to the entire southeast. The equipment will be used, in part, for the 1960 Federal Census but ample capacity will be available for all types of research projects.

Chapel Hill

Chapel Hill, affectionately known as the "southern part of heaven," is a relatively small university community which is renowned for its gracious living and cultural opportunities. Many retired individuals find their way to the community and even in retirement, contribute to its strength and its vitality. The Carolina Inn is a University-operated hotel which is available for all guests and visitors to the community. The Morehead Planetarium is one of six such installations in the United States and the only one on a university campus. The Ackland Art Museum offers a continuing showing of fine art. The North Carolina Symphony Orchestra, the only state-operated orchestra in the nation, has its headquarters on the campus.

The talk of athletics is always in the air and the "win-loss" record usually sufficiently satisfactory to be considered in the collegiate "big league." Playmakers Theatre offers an outstanding bill of local and Broadway talent.

Home and apartment construction has kept up with demand so that most married house officers can find housing of their choice without great difficulty. There are many lovely churches, representing every major faith and a number of fine new schools. There is almost unlimited opportunity for employment for working wives. The University, consisting of 14 colleges and schools, some 70 departments and numerous other institutes, divisions and other academic affiliated organizations, employs student resident and faculty wives in a wide variety of clerical and professional positions.

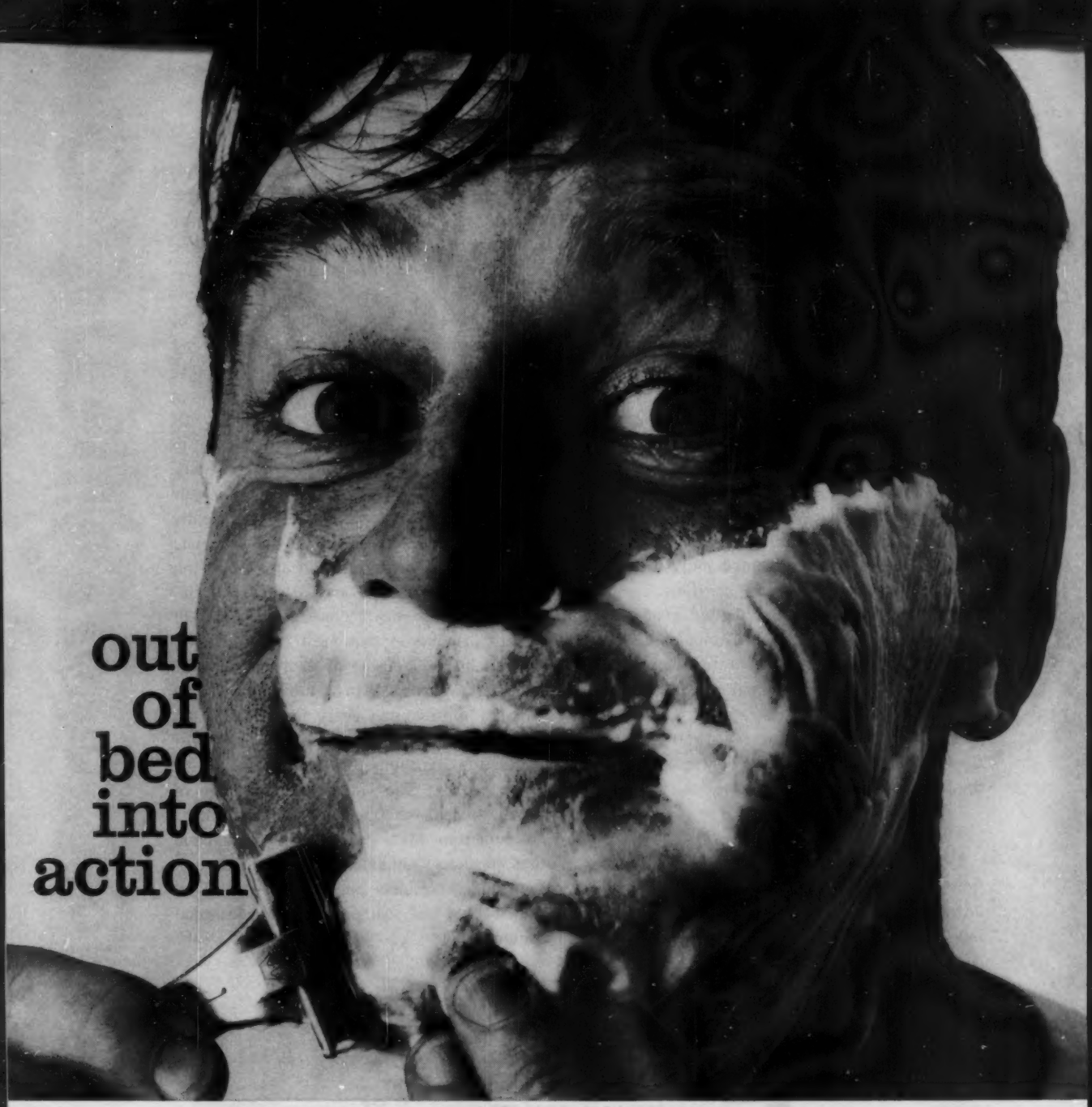


MEDICAL TEASERS

A challenging crossword puzzle for the physician.

SEE PAGE 47a





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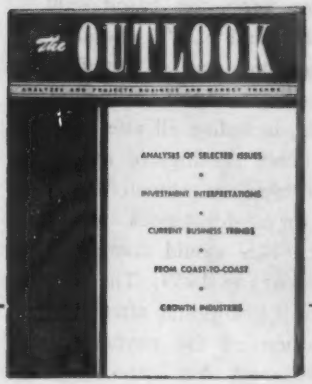
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OUTLOOK FOR GAS PIPELINES IMPROVED

Should Benefit from New Speed-Up in Settling Rate Cases—Stocks Recovering from 1959-60 Market Slump—Yields Still Generous



For the investor in natural gas pipeline securities, the new speed-up procedure recently adopted by the Federal Power Commission in an attempt to settle the more than 113 pipeline rate cases involving increases of around $420 million is a highly constructive development. The placing of rates on a firm basis will remove the uncertainty as to real revenues and profits that has confronted the pipelines in the past several years.

The Commission, in its new policy, sets an interim return that it will allow the pipelines to earn on their properties. If the finalized return is less than the amount requested, the pipeline involved is then ordered to refund to its utility customers any excess revenues collected under bond. Most companies have based their latest rate increase applications on a return of between 6¾% and 7%. This is greater than the return allowed by the FPC in recent rulings.

Of primary importance is the fact that the Commission in several recent decisions breached the historic 6% pattern and allowed as much as 6½%. In several cases, it further liberalized the return on the gas production properties of integrated companies, subject to final disposition of tax credits stemming from depletion and intangible well drilling costs. The final settlement of the El Paso rate case, which was remanded to the FPC for further review by the U. S. Court of Appeals, will presumably set the pattern for the treatment of tax credits relating to production.

The cost of money and the leverage factor of a company's capitalization (the ratio of debt, preferred stock and common stock to total capital) appear to influence the return. Companies with a higher-than-average common equity ratio are granted a somewhat higher return so as to bring in a reasonable return

on equity capital. This is exemplified in the rate cases involving Southern Natural Gas and Manufacturers Light & Heat Co. (a Columbia Gas subsidiary), each of which was granted a 6½% return on its pipelines.

The pipelines are continuing to score exceptional gains in all phases of their activities. A new high in load throughput, revenues, and profits is indicated for 1960, and progressive gains are projected thereafter for the next several years. To meet an unabated load growth, the industry has again embarked on a major expansion program.

Outlays are estimated at a peak of $2,233 million for this year, $1,916 million (could be possibly higher) for 1961, and $4,290 million in the following two years. It is estimated that about 39% of the required funds will be generated internally, 45% from bond and debenture financing, and 16% from the sale of preferred and common stocks.

Natural gas pipeline stocks, like those of electric utilities, are considered income issues and are thus responsive to changes in money rates. Thus, reflecting the money-easing moves by the Federal Reserve System and the speed-up in settling rate cases by the FPC, market prices of this group have recovered from their 1960 lows, but still are down 17% on average from their 1959 highs.

Prospects for an improved regulatory atmosphere and the growth potentials of the industry should further aid the market action of the group over a period of time. In addition, yields are quite generous. Stocks of certain integrated companies could move up sharply should the FPC permit the retention of tax credits relating to production. Brief reviews of six well-regarded companies follow.

● El Paso Natural Gas serves all of the far western states. Extensive allied interests include oil production, refining and marketing, exploration and development, petrochemicals, and varied holdings in Westcoast Transmission and Western Natural Gas, among others. There should be no diminution of El Paso's growth, despite a competing pipeline recently completed and others projected to serve California. The FPC in August, 1959, gave the company a return of 6% on pipelines, 8.61% on gas production properties based only on certain tax benefits, and 6.35% overall. The company seeks to retain the tax benefits from production and is contesting the ruling on that score. Meanwhile, including all rate increases collected under bond, earnings of more than $2.30 a common share are estimated for 1960 without allowing for a 5-for-4 stock split scheduled in October. This would compare with $1.66 on fewer shares in 1959. The $0.32½ quarterly dividend is to continue after the split, and a good portion of the payments may be tax free. *The stock has appeal for the long pull.*

● Southern Natural Gas serves important southern states. It also produces oil and gas, and the 81% owned Offshore Co. does contract drilling and barge rental. The FPC recently granted the company a 6½% return on its pipeline properties and 7% on its production properties for an overall return of 6.52%, subject to final determination of certain tax credits from production. Also, a partial refund may be obtained later from the large contingent increases being paid for the cost of purchased gas. Based on the allowable return, earnings for 1960 may range from $2.25 to $2.35 a common share, subject to the disposition of the affected tax credits. This would compare with $1.85 in 1959, of which $0.26 was derived from the sale of Air Reduction stock. The $0.50 quarterly dividend is secure. *The improved aspects of the company, attractive yield, and growing stake in production make the stock an attractive commitment.*

● Tennessee Gas Transmission is basically a natural gas pipe line operator with markets reaching into New England and Chicago, although it has extensive oil production and allied interests. The FPC recently gave the company a 6⅛% return on its pipeline and the same return on its gas production properties, subject to a later determination of tax credits from production. The company intends to contest this ruling. Based on the allowed return, earnings for 1960 should compare favorably with the $1.29 a common share (adjusted) of 1959, when a higher rate of return was in effect under suspension. The $0.28 quarterly dividend is considered secure, and a portion of



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PATENT APPLICATIONS PENDING

in edema or

▪ more doctors are prescribing –
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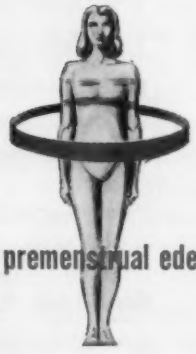
in congestive failure

"Chlorothiazide was given to 16 patients for a total of 295 patient-treatment days." "Chlorothiazide is a safe, oral diuretic with a clinical effect equal to or greater than a parenteral mercurial." Harvey, S. D. and DeGraff, A. C.: N. Y. State J. Med., **59**:1769, (May 1) 1959.



in hypertension

". . . our program has been one of polypharmacy in which we attempt to deplete body sodium with chlorothiazide. This drug is continued indefinitely as background medication for all antihypertensive drugs." Moyer, J. H.: Am. J. Cardiology, **3**:199, (Feb.) 1959.



in premenstrual edema

"Chlorothiazide is an excellent agent for relief of swelling and breast soreness associated with the premenstrual tension syndrome, since all patients [50] with these complaints were completely relieved." Keyes, J. W. and Berlacher, F. J.: J.A.M.A., **169**:109, (Jan. 10) 1959.

DOSAGE: Edema—One or two 500 mg. tablets DIURIL once or twice a day. Hypertension—One 250 mg. tablet DIURIL twice a day to one 500 mg. tablet DIURIL three times a day.

SUPPLIED: 250 mg. and 500 mg. scored tablets DIURIL (chlorothiazide) in bottles of 100 and 1,000.

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than for all other diuretic-antihypertensives combined!



in edema of pregnancy

"One hundred patients were treated with oral chlorothiazide." "In the presence of clinically detectable edema, the agent was universally effective." "Chlorothiazide is at present the most effective oral diuretic in pregnancy." Landesman, R., Ollstein, R. N. and Quinton, E. J.: N. Y. State J. Med., **59**:66, (Jan. 1) 1959.



in cirrhosis with ascites

"All three of the patients with Laennec's cirrhosis, ascites and edema had a favorable response, with a mean weight loss of 8 lbs., during the five-day treatment period with a slight decrease in edema." Castle, C. N., Conrad, J. K. and Hecht, H. H.: Arch. Int. Med., **103**:415, (March) 1959.



in renal edema

"In a study of 10 patients with the nephrotic syndrome associated with various types of renal disease, orally administered chlorothiazide was a successful, and sometimes dramatic, diuretic agent." Burch, G. E. and White, M. A., Jr.: Arch. Int. Med., **103**:369, (March) 1959.

MSD MERCK SHARP & DOHME
Division of Merck & Co., Inc., Philadelphia 1, Pa.

NATURAL GAS PIPELINES

*ISSUE	EARN. $ PER SHARE 1959	E1960	DIVD. $ INDIC.	PRICE RANGE 1959-60	PRICE† APT.	% YIELD
EL PASO NATURAL GAS. .	1.66	2.30	1.30	39 -27¼	35	3.7
MISS. RIVER FUEL	2.19	2.35	1.60	41¾-30	34	4.7
NORTHERN NATURAL GAS	1.92	2.20	1.40	35¾-26¾	31	4.5
PANHANDLE EAST. PIPE L.	3.30	3.50	1.80	59¼-40	45	4.0
SOUTHERN NATURAL GAS	1.85	2.30	2.00	46¾-33⅜	39	5.1
TENN. GAS TRANS.	1.29	1.40	1.12	25¾-20⅛	22	5.1
§TEXAS EAST. TRANS.	2.02	2.50	1.40	36½-26¼	32	4.4
TEXAS GAS TRANS.	2.33	2.65	1.40	36¾-27⅛	33	4.1
§TRANSCONTINENTAL GAS P.L.	1.25	1.25	1.00	25 -17½	22	4.5

*All Listed on New York Stock Exchange unless otherwise noted. §Over-the-counter. E—Estimated. †Because of the time-lag created by the mechanics of magazine publishing, investors should consult daily papers for latest prices.

payments may be tax free for several years. *Considering the good yield presently available, and the ultimate benefits to be derived from new pipelines and the enlargement of non-utility interests not subject to FPC regulation, the stock has merit for income and longer-range growth. The extensive production interests add to its potential.*

● TEXAS EASTERN TRANSMISSION, in addition to its basic natural gas pipeline operations reaching into New England, has considerable production and other interests. The refined oil products network should become an important contributor to earnings over a period of time as load build-up progresses and new markets are developed. A large-scale expansion program is under way and projected. The company has attempted to negotiate a settlement of its two rate increases being collected under bond. The latest increase is based on a 6¾% return on natural gas pipelines and 9% on gas production. Including the higher rates collected under bond, earnings of about $2.50 a common share are indicated for 1960, up from $2.02 in 1959.

Some liberalization of the $0.35 quarterly dividend is possible. *We consider the stock to be one of the more attractive holdings in the natural gas group. Extensive non-regulated activities enhance its appeal.*

● TEXAS GAS TRANSMISSION serves mainly communities along the Mississippi River and Ohio River valleys, reaching into Indiana, Kentucky and Ohio. The company is negotiating a settlement of its pending rate case under terms that would permit retention of about 81% of the amount collected under bond. It is claiming a 6½% return, in lieu of the 6% previously allowed. Adjusted for the proposed settlement, earnings of about $2.65 a common share are indicated for 1960, up from $2.33 in 1959. The promising longer-range prospects are enhanced by the steady growth of the production subsidiary, which contributed $0.37 to 1959 share earnings. This augurs well for periodic dividend increases. The present payment is $0.35 quarterly. *We consider the shares attractive for income and gradual capital gains.*

● TRANSCONTINENTAL GAS PIPE LINE serves primarily the metropolitan New York, New Jersey, Philadelphia and Wilmington areas, and many other eastern seaboard communities. The principal utility customers, utilizing 86% of the company's allocated pipeline capacity, have agreed to accept the company's offer to settle the rate increase of $15,549,000 a year collected under bond under terms that would permit it to retain 80%. Final approval rests with the FPC. To meet load growth, the company is expanding its facilities at a cost of $129,700,000. This should help earnings next year. Meanwhile, based on the terms of the proposed rate settlement, earnings for 1960 should compare favorably with the $1.25 a common share (adjusted) of 1959. The $0.25 quarterly dividend appears secure, and a good portion of the payments may be tax free. *The stock has appeal for income and gradual appreciation.*

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sustains
retains



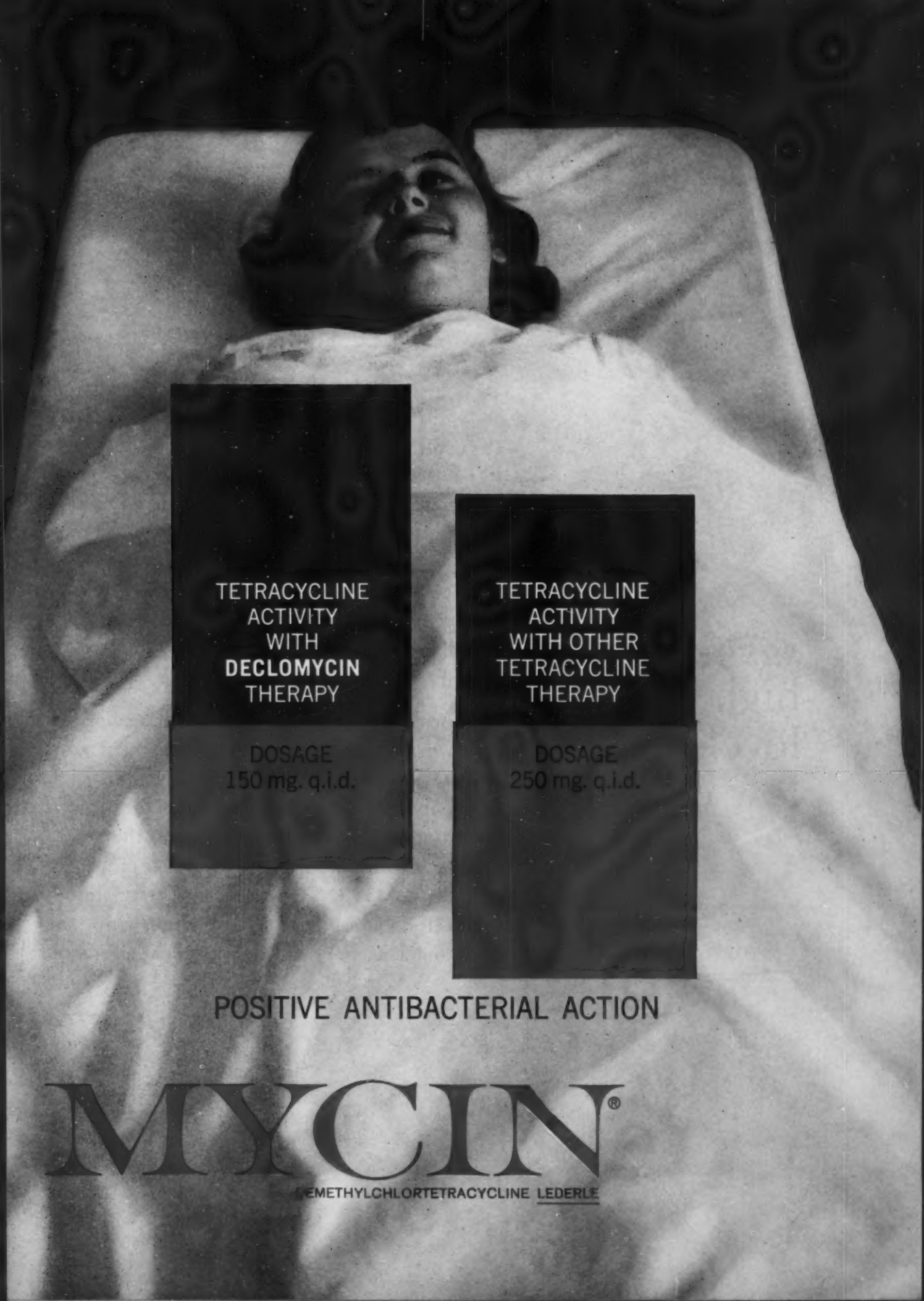
extra
antibiotic
activity

attains
high activity
levels at
low dosage

DECLOMYCIN Demethylchlortetracycline attains—usually within two hours—inhibitory blood levels more than adequate to suppress susceptible pathogens. The substantially higher levels—higher, that is, in comparison with other tetracyclines—insure that positive antibacterial action is brought to bear at the infective site. On a milligram-for-milligram basis, DECLOMYCIN Demethylchlortetracycline has been shown to have two to four times the inhibitory capacity of other tetracyclines against susceptible organisms and has, in addition, been shown to inhibit many individual strains relatively resistant to other tetracyclines.

DECLOMYCIN Demethylchlortetracycline normally attains optimal inhibitory concentrations in affected tissues and body fluids on daily dosages substantially lower than those required to elicit antibiotic activity of comparable intensity with other tetracyclines. With other tetracyclines, the average, effective, adult daily dose is 1 Gm. With DECLOMYCIN Demethylchlortetracycline, it is only 600 mg.

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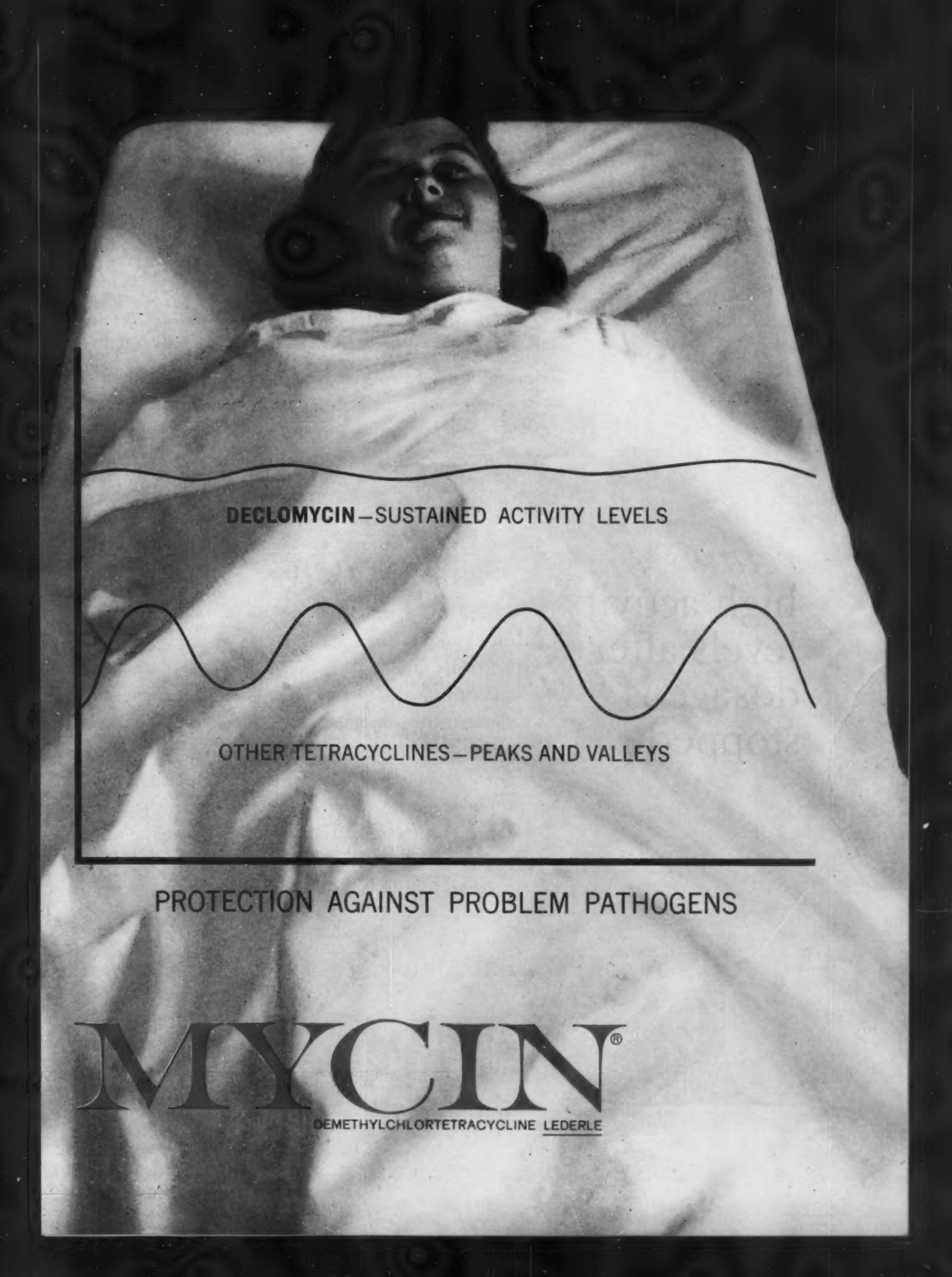

TETRACYCLINE ACTIVITY WITH DECLOMYCIN THERAPY
DOSAGE 150 mg. q.i.d.
TETRACYCLINE ACTIVITY WITH OTHER TETRACYCLINE THERAPY
DOSAGE 250 mg. q.i.d.
POSITIVE ANTIBACTERIAL ACTION
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DEMETHYLCHLORTETRACYCLINE LEDERLE

sustains
high activity
levels at
low dosage

DECLOMYCIN sustains, through the entire therapeutic course, the high activity levels needed to control the primary infective process and to check the onset of a complicating secondary infection at the original—or at another—site. The antibiotic suffuses through organs, tissues and fluids, and is present at therapeutic concentrations in other potentially or actually affected systems while it is acting at the primary site.

DECLOMYCIN sustains this combined therapeutic action, in most instances, without pronounced hour-to-hour, dose-to-dose, peak-and-valley fluctuation in activity levels. This flattening-out of the activity-level oscillations which characterize other tetracyclines is attributable to two distinctive properties of DECLOMYCIN Demethylchlortetracycline — relatively high resistance to degradation within the body and a relatively low rate of renal clearance.

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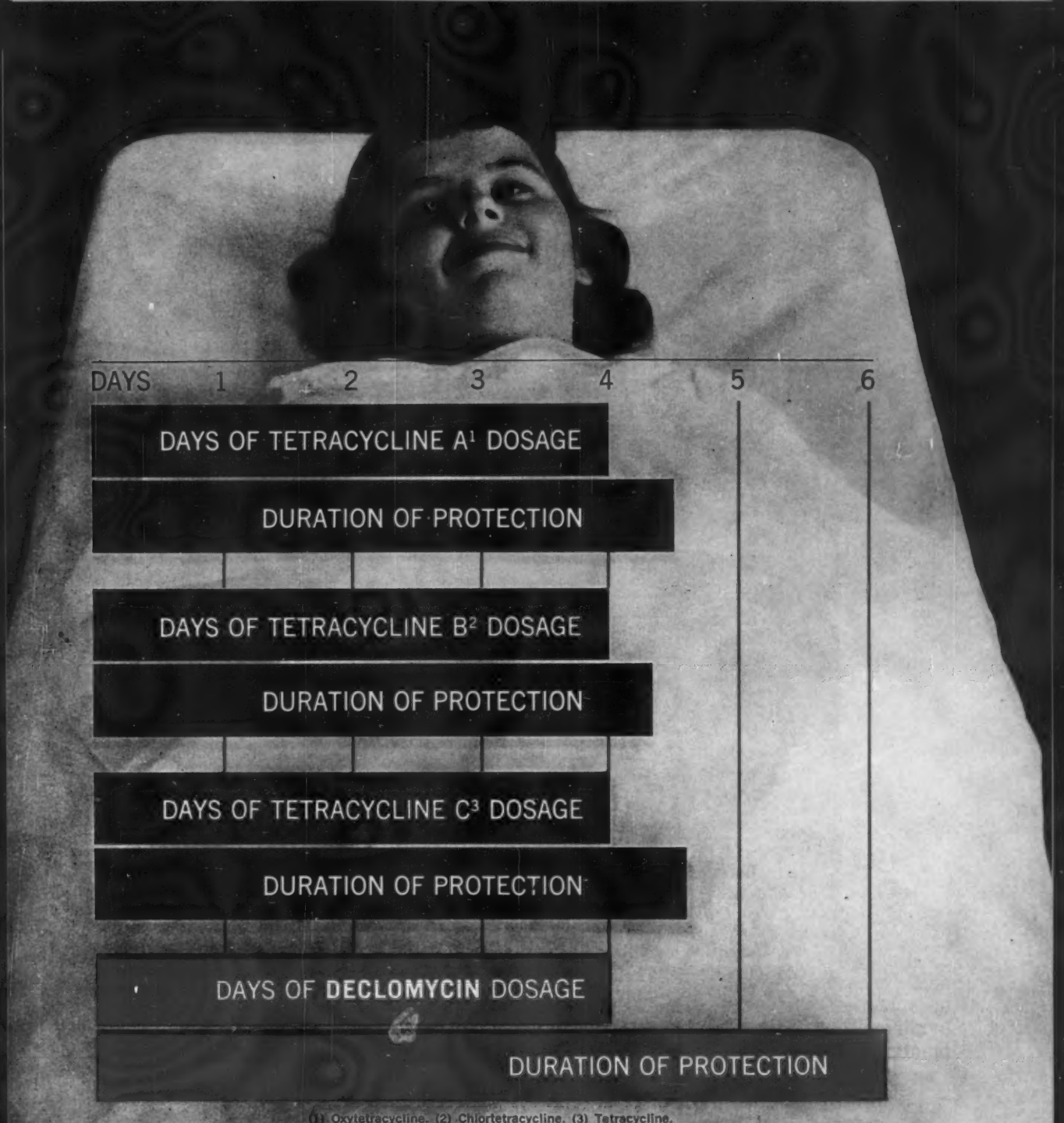

DECLOMYCIN—SUSTAINED ACTIVITY LEVELS
OTHER TETRACYCLINES—PEAKS AND VALLEYS
PROTECTION AGAINST PROBLEM PATHOGENS
MYCIN®
DEMETHYLCHLORTETRACYCLINE LEDERLE

retains
high activity levels after dosage is stopped

DECLOMYCIN **Demethylchlortetracycline** retains significant tetracycline activity levels, in the majority of cases, up to 48 hours after the last dose is given. This attribute is, again, due to higher resistance to degradation and a lower renal clearance rate... as compared with other tetracyclines. A full, extra day of positive antibacterial action may, thus, be confidently expected. Two extra days in which measurable therapeutic levels are retained have been reported in many cases.

DECLOMYCIN, thus, provides up to six days, activity on a four-day therapeutic course. Shortening of the normally indicated course is not recommended, since this may deprive the patient of the benefit of the added insurance against superinfection or recurrence provided by the longer retention of antibacterial potency. One capsule four times a day, for the average infection in the average adult, is the same as with other tetracyclines – but the *total* dosage is lower and the duration of anti-infective action is longer.

DECLO



(1) Oxytetracycline. (2) Chlortetracycline. (3) Tetracycline.

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- higher activity/intake ratio—positive antibacterial action
- sustained activity levels—protection against problem pathogens
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PEDIATRIC DROPS, 60 mg./cc. in 10 cc. bottle with calibrated, plastic dropper. **Dosage:** 1 to 2 drops (3 to 6 mg.) per pound body weight per day—divided into 4 doses.
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PRECAUTIONS: As with other antibiotics, DECLOMYCIN may occasionally give rise to glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis or dermatitis. A photodynamic reaction to sunlight has been observed in a few patients on DECLOMYCIN. Although reversible by discontinuing therapy, patients should avoid exposure to intense sunlight. If adverse reaction or idiosyncrasy occurs, discontinue medication.

Overgrowth of nonsusceptible organisms is a possibility with DECLOMYCIN, as with other antibiotics. The patient should be kept under observation.

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of protection
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FROM COAST TO COAST



Contrary to earlier expectations, sales of mobile homes by CHANCE VOUGHT AIRCRAFT will not take up the slack in deliveries of Crusader fighter planes. The year's earnings may be down to $2.75 a share from $4.12 in 1959, raising some question about the safety of the $0.50 quarterly dividend. . . . YOUNGSTOWN STEEL DOOR has acquired a manufacturer of pipe couplings, nipples, elbows, etc., and it is rumored that other deals may be in the offing. Diversification is unique for this company, which heretofore has confined its activities to the manufacture of railroad freight car doors and car sides. . . . Full-year profits of AMERICAN SMELTING & REFINING may fall a bit short of the previous estimate of $4 a share. Net in 1959 was equal to $1.74 a share, exclusive of capital gains of $2.90. . . . AMERICAN STORES will add about forty new stores in its current fiscal year against sixty-two in the previous year. This cutback is in line with a similar trend among certain other major food chains, suggesting that the industry is following a slower course in view of higher costs and intense competition.

The third-quarter loss of CHRYSLER CORP. should be considerably smaller than a year ago, and the final quarter promises to produce a sizable profit, in contrast to the deficit of $3.35 a share in the closing three months of 1959. Net for all of 1960 might reach $4.50 a share against the 1959 loss of $0.62. Next year's showing should be helped by the absence of this year's premium payments for steel, as well as by reduced amortization charges on special tools. . . . Earnings of MCKESSON & ROBBINS for the fiscal year ending March 31, 1961, are expected to fall moderately below the peak $3.08 a share of fiscal 1960, reflecting the decline in pharmaceutical volume and increased distribution costs.

AMERICAN AGRICULTURAL CHEMICAL seems to be in line for some recovery in earnings after reporting $1.69 a share for the fiscal year ended June 30, 1960, down from $2.41 the year before. Profits were penalized by a number of factors that are not expected to recur, and there should be some contribution from full-scale operation of the new phosphorous plant at Carteret, N. J. . . . SHELLER MANUFACTURING continues to be well fortified with original equipment auto parts accounts on 1961 models. This year will be the best since 1957, with net indicated at $1.75 or more a share, as compared with $1.30 in 1959 and a deficit of $0.32 in 1958. Financial position has been further improved.

Continuing the downward drift of recent years, earnings of HARSHAW CHEMICAL for the fiscal year ending September 30, probably will slip to $1.60 a share from $2.30 in fiscal 1959. A revamped management concept appears in the making that would shorten the entire product line and cast off items returning little or no profit. . . . SEIBERLING RUBBER is unlikely to earn its $1 dividend this year, whereas $1.72 a share was netted in 1959.

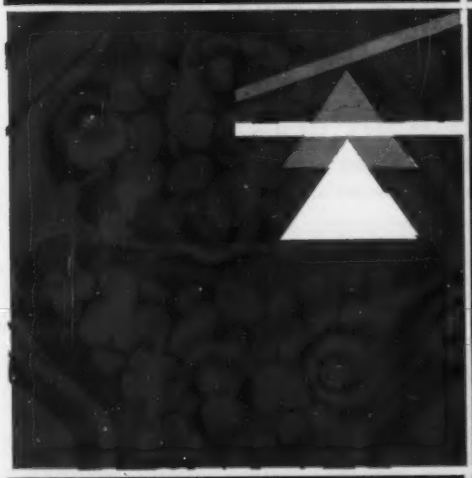
DEFENSIVE ISSUES OUTPERFORMING LIST

Defensive issues, continuing their above-average performances, received an added impetus in late summer from the succession of credit-easing moves. Stocks of this type, which are bought primarily on an investment basis, are much more responsive to monetary developments than the average issue. Among those at new highs were electric utilities, natural gas distributors and pipe lines, telephone, confectionery, foods, cigarettes, and

in rheumatic disorders

whenever aspirin
proves inadequate

Sterazolidin®
brand of prednisone-phenylbutazone



Geigy

165-60

casualty and fire insurance. Other strong groups, motivated by different influences, were brewing, soft drinks, office equipment, gold mining, department stores, and soaps.

On the other hand, a number of groups—roughly classified as cyclical—have failed to keep pace with the market, although they did participate to some extent in the August rally. Among those losing ground were building materials, chemicals, electrical equipment, carpets, machine tools, machinery, metal fabricating, and rail equipment. Two star performers earlier this year — electronics and drugs — have lost some of their popularity for the time being and are selling well below their highs.

A few groups that have sustained prolonged and sizable declines afford some indications of having bottomed out. This seems especially true of the aircrafts and domestic integrated oils. As pointed out in recent issues of *The Outlook*, we believe that a more constructive attitude toward both groups is now warranted. Steels may not yet be in a buying range, since this year's disappointing results are not fully discounted and 1961 prospects are cloudy.

Several changes are being made in our current group appraisals. Market standings of aircraft manufacturing, domestic integrated oils, and natural gas pipe lines are being raised, while those of air transport, banks, chemicals, mail order, and rail equipment are being lowered.

APPEAL OF STOCK GROUPS MEASURED AGAINST THE MARKET

Presented below is our appraisal of the performances likely to be turned in by leading stock groups relative to the general market over the next six months or so. The objective should be to switch out of the least attractive categories into those expected to make a more favorable market showing.

MOST FAVORABLY SITUATED

Aircraft Manufacturing	Mach. (Materials Handling)	Oil (Integrated Domestic)	Publishing
Insurance (Casualty)	Machinery (Steam Gen.)	Printing & Equipment	Soft Drinks
Insurance (Fire)	Office Equipment	Retail Trade (Dept. Stores)	Telephone

DEFENSIVE ISSUES

Banks	Dairy Products	Natural Gas Distributors	Shoes
Biscuit Bakers	Drugs	Natural Gas Pipe Lines	Small Loan Companies
Confectionery	Finance Companies	Retail Trade (Food Chains)	Tobacco (Cigarettes)
Corn Refiners	Foods—Packaged	Retail Trade (Variety Chains)	Utilities (Elec.)

AVERAGE

Air Transport	Coal (Bituminous)	Machine Tools	Rayon & Acetate Yarn
Aluminum	Containers (Metal & Glass)	Mach. (Constr. & Earthmov.)	Retail Apparel Chains
Apparel	Containers (Paper)	Mach. (Industrial)	Retail Trade (Mail Order)
Auto Parts	Copper	Machinery (Specialty)	Soaps
Auto Trucks	Distilling	Meat Packing	Steel
Automobiles	Electrical Equipment	Metal Fabricating	Steel Alloys
Bread & Cake Bakers	Elec. Household Appliances	Motion Pictures	Sugar (Beet Refiners)
Brewing	Electronics	Oil (Crude Producers)	Sugar (Cane Refiners)
Building (Cement)	Fertilizers	Oil (International)	Sulphur
Building (Heat. & Plumbing)	Flour Millers	Paper	Textile Weavers
Building (Roof. & Wallboard)	Foods—Canned	Radio-TV Broadcasters	Tires & Rubber Goods
Carpets & Rugs	Insurance (Life)	Radio-TV Manufacturers	Tobacco (Cigars)
Chemicals	Investment Companies	Railroads	

LEAST ATTRACTIVE

Gold Mining	Machinery (Agricultural)	Rail Equipment	Vegetable Oils
Lead & Zinc	Machinery (Oil Well)	Sugar (Cane Producers)	

WHICH 341 STOCKS TO BUY AND SELL IN 1961!

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OVER 100 YEARS OF SERVICE TO INVESTORS
1860/1960

1961 ANNUAL FORECAST

11 TIMELY NEW STOCK LISTS

Get ready to profit in the coming NEW Stock Market with one of the most important ANNUAL FORECASTS ever presented to investors.

NEW—Stocks to buy and sell now to be in a position to profit in the changing economy ahead.

NEW—Stocks that can outgain the market in 1961.

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- 20 Growth Stocks for Long-Term Profits.
- 35 Candidates for Stock Splits.
- 32 Income Stocks with Profit Potential.
- 18 Blue Chip Stocks for Safety and Income.
- 12 High-Yielding, Top-Quality Bonds.
- 14 Convertible Bonds and Preferred Shares for Safe Income and Capital Gain.
- 25 Candidates for Increased Dividends.
- 6 Christmas Present Stocks for Children.

$1 Simply mail $1 with the coupon below, your name and address for S & P's 1961 Annual Forecast in The OUTLOOK, one of America's Foremost Investment Advisory Services! New Readers only. Subscribers covered.

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IMPROVED PROFITS COMPARISONS AHEAD

First-Half Profits Drop Expected to Be Overcome During Remainder of 1960 — Some Evidence That Squeeze on Margins Is Easing

A squeeze on profit margins characterized corporate operations in the second quarter of 1960. Numerous companies reported slightly larger sales than in the corresponding months of 1959, in line with the higher level of the economy, but earnings were generally lower. As a consequence, aggregate profits dipped below those for the initial quarter of 1960 and fell even more sharply from the record-breaking rate for the June quarter of 1959, when the pre-strike inventory buildup provided an unusual stimulus.

According to our earnings compilations, the year-to-year gain of 4.2% realized in the March quarter (*The Outlook*, May 23, 1960) was converted into a decline of 5.1% for the first six months. As the table below reveals, results were quite mixed, with 35 of the groups showing increases and 39 declines.

The most striking gains were recorded by apparel, biscuit bakers, lead and zinc, machine tools, mining and smelting, and shoes. On the other hand, sizable decreases were experienced by air transport, heating and plumbing, carpets, agricultural machinery, construction machinery, oil-well machinery, rayon, shipbuilding, and steel.

Indications are that year-to-year earnings comparisons henceforth will be more favorable. This expectation is based not so much on any noteworthy vigor in the economy, as it is on the fact that measurements will be against a period when widespread dislocations were caused by the long steel strike. The steel group, in particular, should fare much better.

Another consideration is the possibility of some improvement in profit margins. There is little doubt that many companies set their sights too high early in the year. When demand failed to match the sales targets to which production and expenses were geared, they were forced to make price reductions and step up their sales campaigns to move the inventories that had been built up.

With a more cautious mood now prevailing, production and inventories are being cut back, and there is a more widespread effort to hold the lid on costs. If sales are maintained or show any improvement, the results could be more rewarding in the second half of the year.

If there is disappointment over corporate earnings, it is mainly because too much was expected in the exuberant atmosphere that prevailed at the turn of the year. Actually, corporate profits are at a historically high level. The same is true of dividend payments, which thus far in 1960 are 6% ahead of the previous record set in 1959.

The lag in earnings as compared with 1959 should be gradually overcome, if not by the end of the third quarter then by the close of the year. For 1960 as a whole, we estimate that aggregate profits will show a modest increase—perhaps only 2% or so but enough to establish a new record high. Results by industry groups are likely to show considerable variation, as indicated in the table shown on page 136a.

FIRST-HALF EARNINGS RESULTS BY INDUSTRIES

NO. OF COS.		—FIRST SIX MONTHS— 1959 NET INCOME —(THOUSAND $I)—	1960 NET INCOME	% CHANGE
12	Aircraft Mfg.	69,795	59,491	— 14.8
7	Air Transport	16,836	60	— 99.6
3	Aluminum	62,767	46,679	— 25.6
3	Apparel	1,996	3,029	+ 51.8
4	Automobiles	946,258	903,444	— 4.5
30	Auto Parts & Access.	139,681	117,353	— 16.0

Continued on page 132a



RATIONAL NEW ANTISPASMODIC FORMULATION:

propantheline bromide (7.5 mg.) the standard for control of gastrointestinal spasm / and phenobarbital (15 mg.) the standard for augmenting antispasmodic action compression-coated tablets

Probital provides rational, convenient therapy in smooth-muscle spasm: spasm of the pylorus, small and large intestines and the sphincter of Oddi, as well as gastritis, biliary dyskinesia and diverticulitis.

G. D. SEARLE & CO. *Research in the Service of Medicine* SEARLE

NO. OF COS.		—FIRST SIX MONTHS— 1959 NET INCOME —(THOUSAND $1)—	1960 NET INCOME	% CHANGE
5	Auto Trucks	54,405	33,342	— 38.7
13	Beverages (Brewers)	12,932	14,900	+ 15.2
2	Beverages (Distillers)	10,642	12,371	+ 16.2
5	Beverages (Soft Drinks)	22,068	23,687	+ 7.3
20	Building Materials (Cement)	60,847	49,253	— 19.1
4	Bldg. Mater. (Heat. & Plumb.)	10,605	6,899	— 35.0
8	Bldg. Mater. (Roof. & Wallbd.)	65,188	52,496	— 19.5
4	Carpets & Rugs	8,383	2,520	— 69.9
42	Chemicals	525,048	509,202	— 3.0
14	Coal	29,684	24,282	— 18.2
4	Confectionery	16,817	18,533	+ 10.2
7	Containers (Metal & Glass)	66,955	54,935	— 18.0
7	Containers (Paper)	25,506	24,195	— 5.1
6	Copper	118,279	92,483	— 21.8
27	Drugs	181,281	191,909	+ 5.9
15	Electrical Equip.	101,793	101,130	— 0.7
6	Electric Household Appliances	94,574	91,418	— 3.3
8	Electronics	32,072	32,866	+ 2.5
6	Finance	50,382	49,267	— 2.2
2	Finance (Small Loans)	21,431	23,849	+ 11.3
3	Foods (Biscuit Bakers)	15,556	18,736	+ 20.4
5	Foods (Bread & Cake Bakers)	11,757	9,322	— 20.7
2	Foods (Corn Refiners)	18,210	20,526	+ 12.7
6	Foods (Dairy Products)	47,904	49,935	+ 4.2
5	Foods (Meat Packing)	17,504	18,560	+ 6.0
5	Foods (Packaged)	36,749	40,139	+ 9.2
5	Gold Mining	5,727	6,306	+ 10.1
6	Lead & Zinc	9,356	11,611	+ 24.1
6	Machine Tools	2,088	2,858	+ 36.9
6	Machinery (Agricultural)	66,126	22,011	— 66.7
3	Machy. (Constr. & Earthmvg.)	30,446	21,235	— 30.3
13	Machinery (Industrial)	48,134	46,823	— 2.7
2	Machinery (Mater. Handling)	8,442	6,803	— 19.4
4	Machinery (Oil Well)	8,948	6,023	— 32.7
1	Machinery (Specialty)	1,572	1,757	+ 11.8
3	Machinery (Steam Generating)	15,937	12,844	— 19.4
10	Metal Fabricating	24,472	17,968	— 26.6
3	Mining & Smelting	21,707	34,049	+ 56.9
86	Miscellaneous	276,087	276,362	+ 0.1
3	Motion Pictures	8,576	9,352	+ 9.0
8	Office & Business Equip.	78,557	88,695	+ 12.9
7	Oil (Crude Producers)	45,580	46,905	+ 2.9
22	Oil (Integrated-Domestic)	402,128	377,227	— 6.2
6	Oil (Integrated-Intl.)	932,528	961,027	+ 3.1
24	Paper	120,097	118,156	— 1.6
10	Publishing	13,022	14,134	+ 8.5
6	Radio-TV Broadcasters	27,609	28,377	+ 2.8
6	Radio-TV Manufacturers	36,407	37,785	+ 3.8
18	Railroad Equipment	42,540	40,264	— 5.4
4	Rayon & Acetate Yarns	22,268	13,054	— 41.4
5	Retail Stores (Food Chains)	36,247	34,660	— 4.4

Continued on page 136a

Fostex®
treats their acne while they wash



degreases the skin
completely emulsifies and washes off excess oil from the skin.

helps remove blackheads
penetrates and softens comedones, unblocks pores and facilitates removal of sebum plugs.

dries and peels the skin
removes papule coverings and permits drainage of sebaceous glands.

Patients like Fostex because it is so easy to use. They simply wash acne skin 2 to 4 times a day with Fostex Cream or Fostex Cake, instead of using soap.

Fostex contains Sebulytic®,* a combination of surface-active wetting agents with remarkable antiseborrheic, keratolytic and antibacterial actions . . . enhanced by sulfur 2%, salicylic acid 2%, and hexachlorophene 1%.

*sodium lauryl sulfoacetate, sodium alkyl aryl polyether sulfonate and sodium dioctyl sulfosuccinate.

Fostex is available in two forms—



FOSTEX CREAM, in 4.5 oz. jars.
FOSTEX CAKE, in bar form.

Fostex Cream and Fostex Cake are interchangeable for therapeutic washing of the skin. Fostex Cream is approximately twice as drying as Fostex Cake.

Fostex Cream is also used as a therapeutic shampoo in dandruff and oily scalp.

Write for samples.

WESTWOOD PHARMACEUTICALS • Buffalo 13, New York



this is
PLEXONAL
(ACTUAL SIZE AND SHAPE)

*Optimum results are obtained by gradually increasing the dosage to the maximum the patient can tolerate without the appearance of drowsiness. The following procedure for dosage adjustment has proven highly succesaful:

Take one tablet 2 times per day for 2 days. On the third day increase the daily dosage by one tablet. Similarly increase the dose every third day thereafter, to the point of drowsiness.

For example, if one tablet 4 times a day produces an obvious sleepy feeling, and on three the patient is comfortable, then the proper dose will be three tablets per day.

a superior daytime relaxing agent

(NOT A TRANQUILIZER)

PLEXONAL®

Comparative clinical studies show that PLEXONAL is superior to meprobamate or barbiturates for daytime relaxation[1,2]

"Plexonal was preferred (superior therapeutic effect) by 73.7 per cent of the patients, whereas 11.1 per cent preferred meprobamate, a ratio of 6.6 to 1....30.5 per cent noted adverse reactions to meprobamate as compared to 7 per cent in respect to Plexonal.... Plexonal gave better results than did any of the sedative or relaxing agents that have been available during our experience covering the previous 15 years."[1]

As a daytime relaxant, "it is well suited especially for the treatment of hyperexcitability and anxiety."[2]

Indications: Anxiety, tension, apprehension, nervousness, irritability, restlessness, hyperexcitability.

Extremely well tolerated by geriatric patients who need mild sedation, as well as by depressed patients.

Dosage: One tablet 3 or 4 times a day is adequate for most patients. However, some require up to six tablets per day, whereas others respond adequately to as little as 1 tablet per day.

Composition: Each tablet contains sodium diethylbarbiturate 45 mg., sodium phenylethylbarbiturate 15 mg., sodium isobutylallylbarbiturate 25 mg., scopolamine hydrobromide 0.08 mg., dihydroergotamine methanesulfonate 0.16 mg.

1. Scheifley, C. H.: Proc. Staff Meet. Mayo Clin. 34:408 (Aug. 19) 1959.
2. Kadish, A. H.: Clin. Med. 2:879 (March) 1955.

SANDOZ

4	Retail Stores (Variety)	21,704	20,837	— 4.0
2	Shipbuilding	5,729	922	— 83.9
7	Shipping	12,249	11,322	— 7.6
3	Shoes	3,469	4,426	+ 27.6
42	Steel & Iron	793,057	558,120	— 29.6
3	Steel Alloys	40,604	44,158	+ 8.8
2	Sugar (Cane Refiners)	5,496	5,688	+ 3.5
4	Sulphur	15,862	14,070	— 11.3
5	Textile Weavers	10,070	11,740	+ 16.6
11	Tires & Rubber Goods	83,348	76,571	— 8.1
6	Tobacco (Cigarettes)	111,785	116,621	+ 4.3
4	Tobacco (Cigar Mfrs.)	4,073	4,256	+ 4.5
650	**Total—Industrials**	**6,285,951**	**5,801,833**	**— 7.7**
	Class I Railroads	[1]307,000	[1]238,000	— 22.5
	Electric Power Industry	858,200	[2]918,000	+ 7.0
	Natural Gas Pipe Lines	147,469	178,205	+ 20.8
	Telephone (A. T. & T.)	545,000	[3]595,000	+ 9 2
	Telegraph (Western Union)	4,220	3,196	— 24.3
	Grand Total	**8,147,840**	**7,734,234**	**— 5.1**

[1]Estimated. [2]May and June estimated. [3]June estimated.

EARNINGS OUTLOOK FOR 1960

UP 10% OR MORE FROM 1959

Banks
Biscuit Bakers
Brewers
Casualty Insurance
Copper
Fire Insurance
Leather & Shoes
Machine Tools
Natural Gas Distributors
Natural Gas Pipe Lines
Office Equipment (IBM)
Printing Equipment
Publishing
Radio-TV Broadcasters
Steel
Telephone
Textile Weavers

UP LESS THAN 10%

Aircraft Manufacturers
Chemicals
Cigarettes
Cigars
Confectionery
Containers—Metal & Glass
Containers—Paper
Corn Refiners
Dairy Products
Department Stores
Drugs
Electric Utilities
Electrical Equipment
Electronics
Finance Companies
Flour Millers
Foods—Canned
Foods—Packaged
Grocery Stores
Investment Companies
Life Insurance
Machinery—Specialty
Mail Order
Meat Packing
Oil—International
Paper
Printing
Radio-TV Manufacturers

UP LESS THAN 10% (Contd.)

Railroads
Railroad Equipment
Retail Apparel Chains
Shipping
Small Loan Companies
Soaps
Soft Drinks
Variety Chains

SUBSTANTIALLY UNCHANGED

Air Transport
Auto Parts
Autos
Bituminous Coal
Bread & Cake Bakers
Distillers
Gold
Lead & Zinc
Machinery—Industrial
Office Equip. (excl. IBM)
Oil—Crude Producers
Oil—Domestic Integrated
Tires & Rubber Goods

DOWN LESS THAN 10%

Cement
Electric House. App.
Heating & Plumbing
Mach.—Steam Generating
Roofing & Wallboard

DOWN 10% OR MORE

Aluminum
Auto Trucks
Carpets & Rugs
Machinery—Agricultural
Machinery—Construction
Metal Fabricating
Oil-Well Equipment
Rayon & Acetate Yarns
Sugar—Beet Refiners
Sugar—Cane Producers
Telegraph



Effective against more than 30 of the commonly encountered pathogens, including **staph** and **strep**, Panalba KM assures you of prompt control in potentially-serious pediatric infections. Panalba KM makes a pleasant-tasting, readily accepted suspension.

When sufficient water is added to fill the bottle to a total volume of 40 cc. (or 60 cc.) and the contents shaken, each 5 cc. (one teaspoonful) contains:

Panmycin (tetracycline) equivalent to tetracycline hydrochloride..... 125 mg.
Albamycin (as novobiocin calcium) 62.5 mg.
Potassium Metaphosphate ..... 100 mg.

Supplied: In 40 cc. and 60 cc. bottles.

*TRADEMARK, REG. U. S. PAT. OFF.

THE UPJOHN COMPANY, KALAMAZOO, MICHIGAN

in potentially-serious pediatric infections, make

Upjohn

Panalba KM*Granules

PANMYCIN* PLUS ALBAMYCIN*
WITH POTASSIUM METAPHOSPHATE (KM)

your broad-spectrum antibiotic of **first** resort



GUIDE FOR INVESTORS

Based on recommendations of the Securities and Exchange Commissions in cooperation with the New York Stock Exchange, American Stock Exchange, National Association of Securities Dealers and others.

1. Think before buying, guard against all high pressure sales.

2. Beware of promises of quick spectacular price rises.

3. Be sure you understand the risk of loss as well as prospect of gain.

4. Get the facts—do not buy on tips or rumors.

5. Give at least as much thought when purchasing securities as you would when acquiring any valuable property.

6. Be skeptical of securities offered on the telephone from any firm or salesman you do not know.

7. Request the person offering securities over the phone to mail you written information about the corporation, its operations, net profit, management, financial position and future prospects.

STOCKS FOR TRUST FUNDS IN N. Y.

Prudent Man Rule in Force Since Mid-1950—Permits Investment of 35% of Trust Funds in Stocks and in Bonds Not on Legal List

New York State in mid-1950 recognized the growing trend toward common stocks by adopting the "prudent man" rule with respect to the investment of trust funds. It authorized trustees to invest up to 35% of the funds in "non-legal" securities (preferred and common stocks and bonds not on the legal list), unless other instructions are stipulated in the individual trust instruments.

Where no such instructions apply, 35% of the funds may be invested in "such securities as would be acquired by prudent men of discretion and intelligence in such matters who are seeking a reasonable income and the preservation of their capital." Except for bank and insurance shares, preferred and common stocks must be fully listed on a national securities exchange.

The prudent man rule, which is used in a number of states, may seem like an easy one to interpret, but many trustees have learned to their sorrow that their conception of "prudence" have not always been upheld in the courts.

In fact, the rule has been defined and limited in so many ways by the courts that a trustee no longer can rely, with safety, upon his own understanding of prudence. His greatest protection against surcharges is to exercise due care and diligence in selecting investments, and then to confirm his judgment by seeking outside advice from competent authorities on legal and investment matters. Moreover, constant supervision is necessary thereafter.

Some measure of the extent to which trustees have taken advantage of the liberalized regulation is provided by a breakdown of the composite holdings of common trust funds in New York State. These funds are operated by banks and trust companies as trustees.

The information set forth herein has been obtained from sources believed to be reliable, but its accuracy and completeness are not guaranteed.



new, low-dosage

FLEET® THEOPHYLLINE RECTAL UNIT

provides therapeutic blood levels in bronchial or cardiac asthma with reduced side effects

advantages of Fleet Theophylline Rectal Unit

over suppositories — Water-soluble form assures more uniform absorption over a wider mucosal area . . . without irritation. Avoids slow and erratic absorption of suppositories, which are especially hazardous in children.[1,2]

over oral therapy — Avoids oral xanthine side effects (gastric irritation, nausea, vomiting)[3] and loss of drug effectiveness through hepatic metabolism.[4]

over parenteral therapy — Obviates potential danger and inconvenience of xanthine injection.[1]

over higher potency products — Recent clinical work indicates that "the amounts of theophylline required for relief of bronchospasm are lower than previously thought necessary" and side effects are decidedly reduced with the lower dosage.[5] Early studies[6] also demonstrate rapidity and duration of relief.

ADMINISTRATION: Usual dose—contents of a single unit as often as the physician may direct. FLEET® THEOPHYLLINE Rectal Unit contains 0.3125 Gm. theophylline monoethanolamine in 37 ml. aqueous solution, delivering 0.250 Gm., a 3¾-gr. dose.

AVAILABILITY: FLEET® THEOPHYLLINE Rectal Unit is supplied in a prescription package of 6 individual ready-to-use units. **Also available for patients requiring greater concentrations:** CLYSMATHANE® Disposable Rectal Unit containing 0.625 Gm. theophylline monoethanolamine in prescription package of 6 individual ready-to-use units. This product delivers 0.5 Gm., a 7½-gr. dose.

1. Ridolfo, A. S., and Kohlstaedt, K. G.: Am. J. M. Sc. 237:585, May, 1959. 2. Nelke, A. C.: J. A. M. A. 161:693, June 23, 1956. 3. Goodman, L. S., and Gilman, A.: The Pharmacological Basis of Therapeutics, ed. 2, New York, Macmillan, 1955, p. 349. 4. Blumenthal, L. S., and Fuchs, M.: Am. J. Gastroenterol. 33:189, Feb., 1960. 5. Prince, H. E.; Jackson, R. H.; Etter, R. L.; Raymer, W. J., and Moreland, F. B.: Theophylline Blood Level Studies Following the Rectal Administration of Theophylline Monoethanolamine, to be published. 6. Jackson, R. H.; Prince, H. E., and McGivney, F.: Ann. Allergy 18:620, June, 1960.

Complete information on request.

C. B. FLEET CO., INC. Lynchburg, Virginia



one businessman has epilepsy...even his colleagues need not know—if his seizures are adequately controlled

With proper medication, epileptics may achieve success in a wide variety of professions.[1]

for improved seizure control

DILANTIN® SODIUM KAPSEALS®...*outstandingly effective in* ***grand mal and psychomotor seizures:*** *"*DILANTIN *is an effective anticonvulsant which is useful in controlling epileptic attacks of any type with the exception of idiopathic petit mal."*[2] *"It* [DILANTIN] *is one of the few useful anticonvulsants in which oversedation is not a common problem when full therapeutic doses are employed."*[3] DILANTIN Sodium *(diphenylhydantoin sodium, Parke-Davis) is available in several forms, including Kapseals of 0.03 Gm. and of 0.1 Gm., in bottles of 100 and 1,000.*

other members of THE PARKE-DAVIS FAMILY OF ANTICONVULSANTS

for grand mal and psychomotor seizures: PHELANTIN® Kapseals *(Dilantin 100 mg., phenobarbital 30 mg., desoxyephedrine hydrochloride 2.5 mg.), bottles of 100.* ***for the petit mal triad:*** MILONTIN® Kapseals *(phensuximide, Parke-Davis) 0.5 Gm., bottles of 100 and 1,000; Suspension, 250 mg. per 4 cc., 16-ounce bottles* • CELONTIN® Kapseals *(methsuximide, Parke-Davis) 0.3 Gm., bottles of 100.*

LITERATURE SUPPLYING DETAILS OF DOSAGE AND ADMINISTRATION AVAILABLE ON REQUEST.

(1) Abraham, W., in Green, J. R., & Steelman, H. F.: Epileptic Seizures, Baltimore, Williams & Wilkins Company, 1956, p. 132. (2) Crawley, J. W.: M. Clin. North America 42:317 *(March) 1958. (3) Bray, P. F.:* Pediatrics 23:151, *1959.*

PARKE-DAVIS

PARKE, DAVIS & COMPANY
Detroit 32, Michigan 17660



In over five years

Proven
in more than 750 published clinical studies

Effective
for relief of anxiety and tension

Outstandingly Safe

1. simple dosage schedule produces rapid, reliable tranquilization without unpredictable excitation
2. no cumulative effects, thus no need for difficult dosage readjustments
3. does not produce ataxia, change in appetite or libido
4. does not produce depression, Parkinson-like symptoms, jaundice or agranulocytosis
5. does not impair mental efficiency or normal behavior

Miltown®
meprobamate (Wallace)

Usual dosage: One or two 400 mg. tablets t.i.d.
Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets.
Also as MEPROTABS®—400 mg. *unmarked*, coated tablets; and as MEPROSPAN®—400 mg. and 200 mg. *continuous release* capsules.

WALLACE LABORATORIES / *Cranbury, N. J.*

®TRADE-MARK

of clinical use...



...for the tense and nervous patient

Despite the introduction in recent years of "new and different" tranquilizers, Miltown continues, quietly and steadfastly, to gain in acceptance. Meprobamate (Miltown) is prescribed by the medical profession more than any other tranquilizer in the world.

The reasons are not hard to find. Miltown is a ***known*** drug. Its few side effects have been fully reported. ***There are no surprises in store for either the patient or the physician.***

CM-2660

NEW analgesic

Kills pain



stops tension

For neuralgias, dysmenorrhea, upper respiratory distress, postsurgical conditions... new compound kills pain, stops tension, reduces fever—gives more complete relief than other analgesics.

Soma Compound is an entirely new, totally different analgesic combination that contains three drugs. First, Soma: a new type of analgesic that has proved to be highly effective in relieving both pain and tension.* Second, phenacetin: a "standard" analgesic and antipyretic. Third, caffeine: a safe, mild stimulant for elevation of mood. As a result, the patient gets more complete relief than he does with other analgesics.

Soma Compound is nonnarcotic and nonaddicting. It reduces pain perception without impairing the natural defense reflexes.*

NEW NONNARCOTIC ANALGESIC

soma® Compound

Composition: Soma (carisoprodol), 200 mg.; phenacetin, 160 mg.; caffeine, 32 mg.
Dosage: 1 or 2 tablets q.i.d.
Supplied: Bottles of 50 apricot-colored, scored tablets.

NEW FOR MORE SEVERE PAIN

soma® Compound + codeine

BOOSTS THE EFFECTIVENESS OF CODEINE: Soma Compound boosts the effectiveness of codeine. Therefore, only ¼ grain of codeine phosphate is supplied to relieve the more severe pain that usually requires ½ grain.

Composition: Same as Soma Compound plus ¼ grain codeine phosphate.
Dosage: 1 or 2 tablets q.i.d.
Supplied: Bottles of 50 white, lozenge-shaped tablets; subject to Federal Narcotics Regulations.

References available on request.

WALLACE LABORATORIES • Cranbury, N. J.

Their purpose is to combine relatively small trust accounts into one pool so as to obtain broader diversification of investments. As of October 31, 1959, legal funds totaling $145 million had 2.2% invested in bank and insurance stocks, 29.7% in other common stocks, and the balance in bonds and cash. At the same date, discretionary funds aggregating $370 million had 5.3% in preferred stocks, 4.8% in bank and insurance shares, 55.6% in other common stocks, and the balance in bonds and cash.

Many preferred and common stocks may be considered suitable for the investment of trust funds in New York State under a broad interpretation of the law, but it obviously is advisable for trustees to play "safe" by selecting only issues of unquestioned investment merit.

We doubt that any question could be raised concerning long-term dividend-paying common stocks of the caliber of those listed in the table below. This is by no means a comprehensive list, but rather is presented to illustrate the type of stocks that seem to us to qualify.

TYPES OF STOCKS BELIEVED SUITABLE FOR NEW YORK TRUST FUNDS

Allied Chemical
American Can
American Cyanamid
American Electric Power
American Tel. & Tel.
American Tobacco
Baltimore Gas & Elec.
Beech-Nut Life Savers
Borden Co.
Brown Shoe
Campbell Soup
Chase Manhattan Bank
Chemical Bk. N.Y. Tr.
Cincinnati Gas & Elec.
Cleve. Electric Illum.
Commonwealth Edison
Consolidated Edison
Consumers Power
Continental Insurance
Corn Products
Dayton Power & Light
du Pont (E. I.)
Eastman Kodak
First Natl. City Bank
First Natl. Stores
First Penna. Bk. & Tr.
General Electric
General Foods
General Mills
General Motors
Grant (W. T.)
Gulf Oil
Hartford Fire Insurance
Heinz (H. J.)
Ins. Co. of North America
International Salt
Johns-Manville
Kroger Co.
Libbey-Owens-Ford
Liggett & Myers
Manufacturers Trust
May Dept. Stores
Merck & Co.
Minnesota Mining & Mfg.
Morgan Guaranty Trust
National Biscuit
National Dairy Products
National Lead
New England Tel. & Tel.
Otis Elevator
Owens-Illinois Glass
Pacific Gas & Electric
Pacific Lighting
Parke, Davis
Philadelphia Electric
Pittsburgh Plate Glass
Procter & Gamble
Public Service of Colorado
Reynolds Tobacco
Safeway Stores
Scott Paper
Sears, Roebuck
Socony Mobil Oil
Southern Calif. Edison
Standard Brands
Standard Oil of Calif.
Standard Oil of Indiana
Standard Oil (New Jersey)
Sterling Drug
Sunshine Biscuits
Texaco, Inc.
Union Carbide
Union Pacific
United States Gypsum
Woolworth (F. W.)

GROWING MARKET FOR ELECTRIC TYPEWRITERS

In the first half of 1960 (latest available figures), dollar sales of standard typewriters rose 3.6% over the similar year-earlier period. While, on the surface, this performance gives the appearance of a mature, settled industry experiencing modest growth, such is far from the case. Actually, this overall sales figure masks a number of incisive changes taking place within the industry.

One of the most significant is the continued growth in importance of high-priced electric models. This factor was almost entirely responsible for the increased dollar sales reported for the first six months. During that period, electric typewriters accounted for some 49% of total dollar volume, up from roughly 43% in 1959, 37% the year before, and 32% in 1957. While future market penetration is likely to proceed at a slower rate, further significant sales progress is indicated.



Cremomycin® provides rapid relief of virtually all diarrheas

NEOMYCIN—rapidly bactericidal against most intestinal pathogens, but relatively ineffective against certain diarrhea-causing organisms.

SULFASUXIDINE® (succinylsulfathiazole)—an ideal adjunct to neomycin because it is highly effective against Clostridia and certain other neomycin-resistant organisms.

KAOLIN AND PECTIN—coat and soothe the inflamed mucosa, adsorb toxins, help reduce intestinal hypermotility, help provide rapid symptomatic relief.

For additional information, write Professional Services, Merck Sharp & Dohme, West Point, Pa.

MERCK SHARP & DOHME, DIVISION OF MERCK & CO., Inc., PHILADELPHIA 1, PA.

CREMOMYCIN AND SULFASUXIDINE ARE TRADEMARKS OF MERCK & CO., INC.

STEEL THE BELLWETHER?

Steel continues to hold the key to the general business outlook for the remainder of the year. And the automobile industry will largely call the tune for steel. Motor car makers, it now becomes obvious, had more steel on hand than was generally believed. Inventories of the Big Three at the end of June were actually higher than they were a year earlier, when stocks were being built up as rapidly as possible in anticipation of the steel strike. Their respective positions, in millions, follow:



	June 1959	June 1960
CHRYSLER	$ 320	$ 328
FORD	480	489
Gen. Motors	1,687	1,747
Total	$2,487	$2,564

While the June total was more than $200 million below that of March 31, 1960, and some further reduction is indicated to have been made in July, early 1961 models apparently will be fabricated mostly out of steel stocks on hand. Releases against new-season orders may not be an important element in steel shipments much before October.

This factor is counted on to give some temporary buoyancy to the business barometers in the final quarter, perhaps lifting the production index by two or three points. General steel orders are understood to have risen rather sharply in August—almost to the level of shipments.

Another consideration pointing in the same direction is that the auto industry will have to build enough cars to stock dealers (probably at least a million units, considering the additional compacts to be introduced) plus whatever number of 1961 model cars are sold by dealers during that period. Total car production will probably run well above the level of the corresponding 1959 period.

GROSS NATIONAL PRODUCT

(In Billion $)

	1958	1959	2ND QTR. 1960	*EST. 1960	% *CHANGE 1959-60
GROSS NAT'L PRODUCT	444.2	482.1	505.0	506.0	+ 5.0
PERSONAL CONSUMP. EXPEND.	293.5	313.8	329.0	330.0	+ 5.2
Durable Goods	37.3	43.4	44.5	44.5	+ 2.5
Non-Durable Goods	142.0	147.6	153.5	154.0	+ 4.3
Services	114.2	122.8	130.9	131.5	+ 7.1
GROSS PRIVATE INVESTMENT	56.0	72.0	75.5	74.5	+ 3.5
New Construction	35.4	40.3	40.7	40.5	+ 0.5
Producers' Equipment	23.1	25.8	29.5	29.0	+12.4
Inventory Change	—2.5	+5.9	+5.3	+5.0	—15.3
NET EXPORTS	+1.2	—1.0	+2.0	+2.0	.....
GOVERNMENT PURCHASES	93.5	97.1	98.6	99.5	+ 2.5
Federal	52.6	53.3	51.7	52.5	— 1.5
State & Local	40.8	43.9	46.9	47.0	+ 7.1
PERSONAL INCOME	360.3	383.3	404.2	405.0	+ 5.7
PERSONAL TAX	42.4	46.0	50.0	50.0	+ 8.7
DISPOSABLE INCOME	317.9	337.3	354.1	355.0	+ 5.2
PERSONAL SAVINGS	24.4	23.4	25.2	25.0	+ 6.8
INDUSTRIAL PRODUCTION					
F.R.B. Index 1957=100	93	105	109	110	+ 4.5

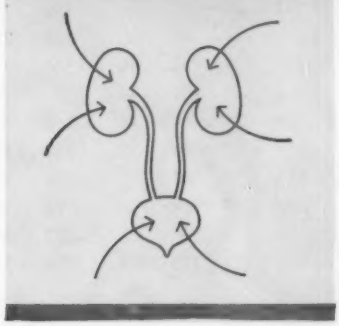
*Estimated by Standard & Poor's.

for prompt control of urinary tract infections

Urobiotic®

Cosa-Terramycin®—sulfonamide—analgesic

Capsules



IN BRIEF

Urobiotic Capsules provide control of urinary infections through effective Terramycin and sulfamethizole concentrations in the blood and urine, plus the prompt analgesic effect of phenylazo-diamino-pyridine upon the inflamed mucosa. Each Urobiotic Capsule contains 125 mg. Cosa-Terramycin (oxytetracycline with glucosamine), 250 mg. sulfamethizole, and 50 mg. phenylazo-diamino-pyridine HCl.

INDICATIONS: Urobiotic is indicated in the treatment of a number of common genitourinary infections caused by susceptible organisms. It may also be used prophylactically before and after genitourinary or pelvic surgery, following instrumentation procedures, during the use of retention catheters, and in patients with conditions such as cord bladder or cystocele.

DOSAGE: In adults, a dose of 1 or 2 capsules four times daily is suggested, depending upon the severity and response of the infection. In children under 100 lbs., the suggested average dose is 1 capsule four times daily; in children under 60 lbs., 1 capsule three times daily. Therapy should be continued for a minimum of 7 days or until bacteriologic cure.

CONTRAINDICATIONS: Urobiotic may be contraindicated in patients with chronic glomerulonephritis, hepatitis, hepatic failure, uremia, and obstructive lesions of the urinary tract, and should not be used in patients sensitive to any of its components.

PRECAUTIONS: The use of broad-spectrum antibiotics may in rare cases result in an overgrowth of nonsusceptible organisms, such as monilia or staphylococci. Should such superinfection occur, therapy with Urobiotic should be discontinued and specific therapy instituted as shown by susceptibility testing. The usual precautions for sulfonamide therapy should be followed when using Urobiotic.

SUPPLY: Urobiotic capsules, yellow and grey with "Pfizer" imprint, bottles of 50.

Detailed professional information is available on request from Pfizer Laboratories Medical Department.

Science for the world's well-being™

Pfizer

PFIZER LABORATORIES
Division, Chas. Pfizer & Co., Inc.
Brooklyn 6, New York

PROGRESS REPORT OF INDUSTRY

IN RELATIVES 1949 = 100

	SALES				NEW ORDERS				UNFILLED ORDERS				INVENTORIES			
	JULY 1959	MAY 1960	JUNE 1960	†JULY 1960	JULY 1959	MAY 1960	JUNE 1960	†JULY 1960	JULY 1959	MAY 1960	JUNE 1960	†JULY 1960	JULY 1959	MAY 1960	JUNE 1960	†JULY 1960
Aircraft Mfg.	801	1021	1081	914	572	906	1478	721	613	586	616	625	861	1053	1043	1046
Autos & Trucks	191	212	205	169	...	...	...	...	...	...	...	...	189	213	207	194
Auto Parts	265	271	270	223	156	122	131	116	90	77	74	74	314	317	317	311
Auto Tires	184	184	191	...	...	...	...	...	...	...	...	...	166	255	250	...
Bldg. Materials	291	264	289	278	215	210	231	247	272	271	263	260	214	248	246	234
Cement	357	293	337	325	381	311	337	289	342	280	258	222	488	560	545	521
Chemicals	221	247	243	220	...	...	...	...	...	...	...	...	211	233	235	239
Copper Refining	193	209	205	161	...	...	...	...	...	...	...	...	122	83	111	116
Corn Products	201	193	191	177	...	...	...	...	...	...	...	...	185	183	171	169
Elec. Equip.	184	188	189	183	143	140	149	150	204	193	199	198	191	205	206	203
Floor Covering	101	103	121	76	...	...	...	...	...	...	...	...	173	161	151	148
Lumber	158	154	147	...	163	150	144	...	131	96	85	...	154	168	167	...
Machinery (Agric.)	126	124	124	124	...	...	...	...	...	...	...	...	162	200	195	187
Machinery (Indus.)	184	201	227	190	280	293	312	258	217	241	241	240	220	275	273	273
Machine Tools	150	213	238	190	261	195	219	169	364	431	401	404	...	...	...	...
Metal Fab.	202	203	214	183	199	206	208	193	99	95	91	93	216	221	215	214
Shoes	236	218	220	273	115	262	207	100	...	...	...	...	118	148	148	147
Steel	138	194	181	140	102	218	208	185	127	98	84	75	178	198	210	216
Textiles	115	114	125	...	169	148	122	...	181	127	118	...	78	85	88	...
Zinc	101	108	100	99	...	...	...	...	...	...	...	...	272	292	332	366
*COMPOSITE	200	209	212	198	187	197	208	182	219	211	199	198	194	215	215	212

*Includes companies in industries other than those shown above. †Data for July 1960 are preliminary, based on incomplete reports.

One further factor deserves mention. While machine tool orders have been going poorly, a considerable volume may have been held up until buyers have had an opportunity to compare new machine offerings at the show in Chicago this month. That was the experience at the last such show, in 1955. New orders dropped from $74.5 million in June of that year to $58.3 million in September, then rose to $99.2 million in October, $124.2 million in November, and $151.3 million in December.

These reasons, plus a favorable trend of industrial building awards, the increase in defense orders, and the rising merchandise export balance, tend to support the view that the year will end on a rising note. Indeed, the movement could generate enough momentum to carry into 1961.

More important at this time, however, is the question of whether such a move can be sustained by easy money and new political forces, or whether it is likely to give way to a more general recession next year. We believe plans should give greater weight to the second alternative. The reasons previously cited still appear valid:

(1) The capital expansion up cycle is tiring, with shrinking profit margins weighing heavily in the minds of corporate directors in their consideration of fresh appropriations.

(2) Statistical position of the automobile industry will be unwieldy, with production late this year borrowing to some extent from 1961, unless consumer buying belies recently expressed buying intentions.

(3) A vacancy ratio of 7.3% in rental housing, highest in the life of that statistical series, argues against more active residential building.

As things stand today, however, there is little reason to expect the next recession to be any more severe than that of 1957-58. Rising Federal expenditures should again be a supporting force (a $5 billion rise in annual rate between late 1957 and late 1958 was a major

she can be...

allergy-free for months



with a one week course of daily injections

Anergex—1 ml. daily for 6-8 days—usually provides prompt relief that persists for months.

Children with asthma or asthmatic bronchitis show particularly dramatic response. In *all age groups*, reports on over 3,000 patients with all common allergic diseases have shown that over 70 per cent derived marked benefit or complete relief following a single short course of Anergex injections.

Anergex—a specially prepared botanical extract—is nonspecific in action; it suppresses allergic reactions *regardless* of the nature or number of offending allergens.

Anergex eliminates skin testing, long drawn-out desensitization procedures, and special diets. It has been effective even in patients who failed to respond to other therapeutic measures.

Effective in seasonal and nonseasonal rhinitis (pollens, dust, dander, molds, foods); allergic asthma; asthmatic bronchitis and eczema in children; food sensitivities.

Available: Vials containing 8 ml.—one average treatment course.

WRITE FOR REPRINTS AND LITERATURE

ANERGEX®

the new concept for the treatment of allergic diseases

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Patents Pending

protection

against premature aging...

ELDEC®

mineral-vitamin-hormone supplement

KAPSEALS®

ELDEC Kapseals help offset the disorders of advancing age for the patient now in his middle years. Supplying numerous valuable dietary and metabolic factors, ELDEC Kapseals provide the patient with comprehensive physiologic supplementation to meet the threat of nutritional and hormonal deficiencies... aid him in meeting the problem of declining health during the years ahead. With ELDEC Kapseals, the patient can plan ahead for tomorrow with a greater assurance of good health and well-being.



PARKE-DAVIS

PARKE, DAVIS & COMPANY
Detroit 32, Michigan

prop). Total consumer spending should be equally well sustained. Inventory liquidation might be less drastic; the sales-inventory ratio is now more conservative than it was three years ago.

The easy money program, begun by the Federal Reserve rather early in this cycle, is also calculated to help hold any recession within bounds. It is unlikely, by itself, to prevent a drop. Availability of lower-cost credit has heretofore stimulated latent housing demand; it is debatable that such demand now exists. Easy money also encourages businessmen to increase inventories, if higher prices or shortages threaten; neither is indicated next year. Favorable borrowing conditions are a consideration in plant expansion; they are probably less compelling, however, than either the state of need for additional capacity or the level and trend of profits, both of which are shaping up on the negative side.

PROFITS TO RISE FOR PRODUCERS OF CEREAL

Sales of specialty bakers and producers of breakfast cereals are running at record levels. Continuation of a gradual uptrend can be expected over the long term, in line with growth of population and consumer income. Demand is little affected by business recessions.

Competition is keen, holding down prices. Operating margins range from fairly narrow to moderate and are generally under best older levels. However, profits of most companies improved last year and will rise this year.

FURTHER GROWTH INDICATED FOR VENDING MACHINES

Vending machines is a fast growing, highly competitive industry. Volume last year is estimated to have reached $2,300 million through the medium of some 3½ million machines. Back in 1925, the respective figures were $30 million and 50,000. Trade sources look for growth at an annual rate of 10% to 15% over the next decade, at least.

An outstanding development in recent years has been the installation of automatic cafeterias consisting of a bank of coin-operated vending machines offering not only cigarettes, confectionery, and cold drinks, but also hot foods in the form of light meals, soups, coffee, etc. Such self-service automatic cafeterias are replacing at a substantial rate, the conventional service type of cafeteria for in-plant feeding.

RECORD CIGARETTE SALES INDICATED

Domestic cigarette consumption in 1960 is expected to set a new record for the fourth consecutive year. Unit sales in the first five months (as measured by tax-paid removals) were up about 5.3%, year-to-year, and volume for all of 1960 could be in the range of 470 to 474 billion units, a gain of 3.5% to 4.5% over the roughly 454 billion of 1959.

Filter cigarettes captured an estimated 50.5% of the total domestic market in 1959, up from 46% in 1958 and only 1.4% in 1952. A modest further increase is possible this year, mainly reflecting the growing popularity of menthol flavored filters. The latter brands, actually a market-within-a-market, accounted for over 10% of total 1959 cigarette production and will represent a considerably larger proportion in 1960. Sales of non-filters appear to be stabilizing after a long decline.

CONTINUED GROWTH FOR ELECTRONIC DATA PROCESSING EQUIPMENT

Sales of electronic data processing equipment should continue to experience significant growth in the period ahead. This prospect primarily reflects the fact that modern data handling apparatus offers benefits in terms of paperwork efficiency that are too great to be ignored in an era of rising clerical costs.

In an effort to capitalize fully on demand for equipment of this type, manufacturers are continuously introducing new lines, featuring higher speeds, increased reliability and greater overall capabilities. While development of new products has helped bolster sales importantly, it also has resulted in extremely heavy expenses.

help make
the years of maturity
years of health...

ELDEC®

comprehensive physiologic supplement

KAPSEALS®

Physiologic Prophylaxis

- *10 important vitamins plus minerals* to help maintain cellular function and to correct deficiencies
- *protein improvement factors* to help compensate for poor food selection
- *digestive enzymes* to aid in offsetting decreased natural production
- *steroids* to stimulate metabolism and prevent or help correct protein deficiency states

Packaging: ELDEC Kapseals are available in bottles of 100.



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PROSPECTS FAVORABLE FOR CIGAR MAKERS

Increases in or imposition of large excise taxes on cigars by a number of states in the latter half of 1959 failed to stem the rise in per capita cigar consumption in the forepart of this year. The increase in cigar demand mainly mirrors the success of the saturation advertising approach to cigar promotion, a policy aimed at attracting new cigar smokers rather than attempting to convert confirmed cigar users to another brand.

While total production of large cigars in the first five months was 5.4% larger than a year before, tax removals increased only 2.5%, mainly reflecting the fact that removals in the preceding year were inflated by substantial shipments into areas where increased state levels were scheduled to go into effect July 1. Year-to-year gains in cigar consumption over the remainder of 1960 probably will be wider than in the first five months.



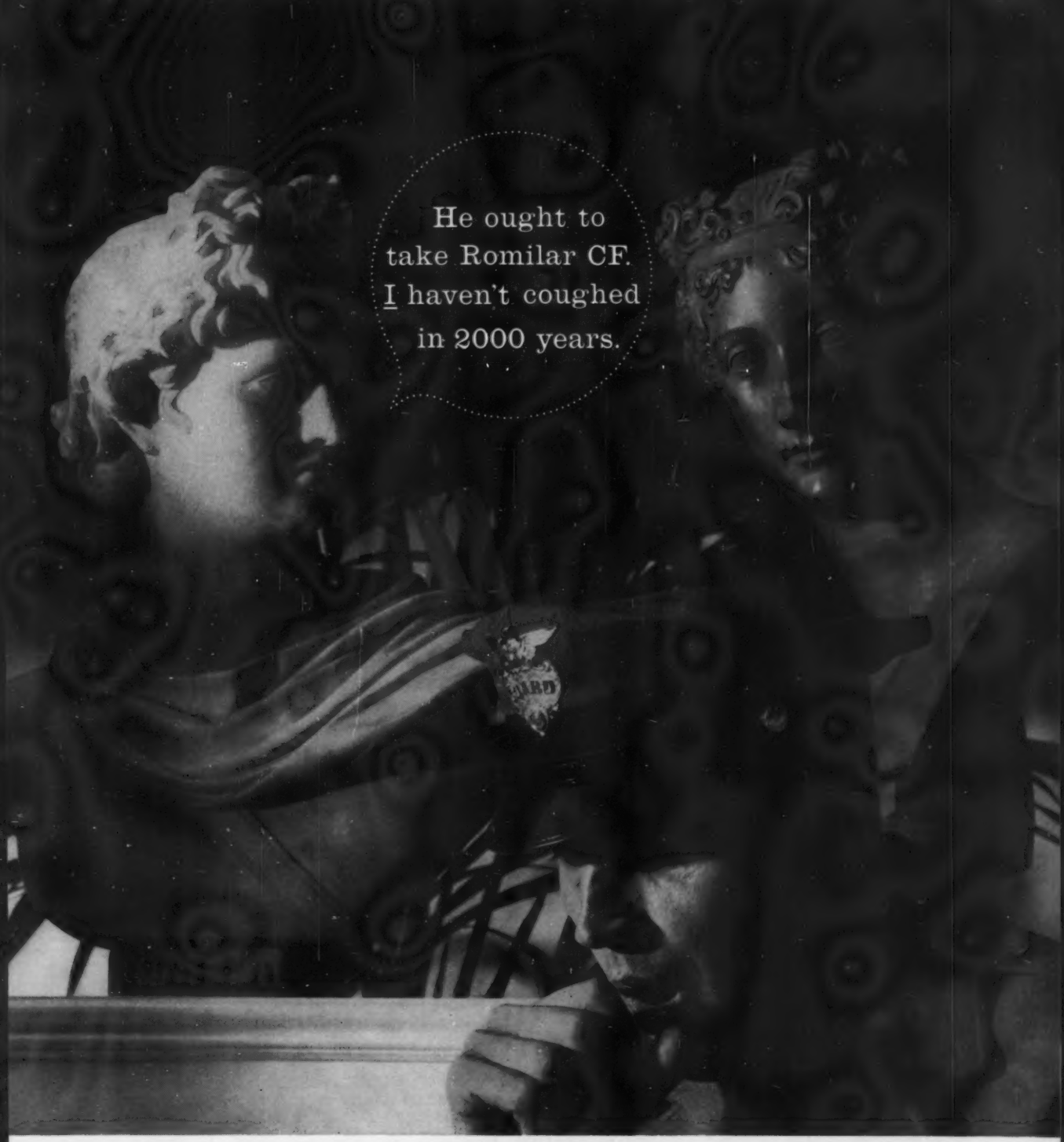
Questions on investment may be addressed to this column in care of MEDICAL TIMES. Those of general interest will be answered in the column. It will be understood that no question can be answered by mail.

● *Is there any rule that will tell me when a stock I'm interested in is too high or too low, in other words when it would be a good thing to sell and when to buy?*

One yardstick that has been used is price times earnings. If a stock is selling for $60 a share and earning $4 a year, it is selling at 15 times earnings. The difficulty with this particular yardstick is that it isn't always 36 inches long. In recent years, in particular, one stock group after another, from the electronics group to the recreation industries, has acquired market glamor. As a result, it is not uncommon to find stocks with glamor selling for 30, 40 or 50 times earnings. But within a group of comparable stocks, the yardstick can still be applied. If you're interested in a steel stock, compare the PTE ratio of that stock with others in the steel group. Take a look at the earnings record for four or five years and see if the ratio for your stock has moved in course with earnings.

● *Does it make sense for the small investor to watch the averages? I own small amounts of six different stocks and am more interested in what they do than in what a thousand stocks that I don't own do.*

You do well to watch your own stocks first. It's natural and a good thing, too. But you can still do that and spare a few seconds to look at the averages or market indices. These are much more important to the trader or the short-term speculator than they are to the long-range investor, but they have something to say even to the latter. Even if you are an investor with a long-range point of view, you probably don't intend to keep your portfolio just as it is, without adding or subtracting, for the rest of your life. To the extent that market indices show the trend of the market, they may be a help in telling you when to buy or when to sell.



ROMILAR CF will stop that cough by prompt, specific control of the cough reflex—without narcotic hazards or complications. Relief begins within 15 to 30 minutes, lasts for as long as 6 hours. **ROMILAR CF** treats the entire cough and cold complex—nasal and bronchial congestion, allergic manifestations, fever, headache and myalgia, as well as cough. Romilar® Hydrobromide—brand of dextromethorphan hydrobromide.

Non-narcotic. No prescription required. Syrup now available in new 3-oz bottle size. Capsules in bottles of 100.

ROMILAR CF

for maximum cough relief

ROCHE LABORATORIES • Division of Hoffmann-La Roche Inc.



Waikiki: Hawaii Visitors Bureau Photo

HAWAIIAN HOLIDAY

With jets cutting travel time, more and more "continentals" are vacationing in our newest state. Hawaii has much to offer — friendly people, wonderful weather, beautiful beaches, outstanding fishing and a great variety of scene.

Hawaii, our newest state, is hardly new as a vacationland, its picturesque wonders and equable climate having been well known for many years. But before World War II it was primarily a pineapple and sugar kingdom where tourism was a sideline. Today in Hawaii the tourist's dollar is vital to the economy and new facilities for visitors are going up at a rapid pace. A potent factor in the travel boom is the jet plane. Now it takes just a little over five hours to reach Hawaii from the mainland.

It has been said that Hawaii has the kind of climate that southern California and Florida claim they have. In other words, it's just about perfect, with average temperatures in the 70's all year round. Sea currents and trade winds create a natural air-conditioning.

The state of Hawaii is made up of five major islands—Hawaii, Kauai, Oahu, Molokai and Maui—and several lesser ones. Honolulu, now a city of more than 300,000, is located on Oahu.

Island of Oahu

This is the third largest of the islands and contains the major part of the population. Honolulu, metropolitan crossroads of the Pacific, is port of call for all transPacific ocean liners and more than 14 military and commercial airlines. Its Waikiki beach is center of



The World is your check list on BOAC

Now let's see...where to go. There's always the Caribbean, or Africa, maybe. And Europe is fun for the Winter Sports. But then, the Orient is popular, too. Or why not make it Round-the-World. Hard to decide *where* to go. But never *how*. BOAC is the natural choice for that. Flies with Rolls-Royce 707's, Comet jet liners or jet-prop Britannias to all of 51 countries on six continents, so just choose the spot and you can bet BOAC jets there.

And rather than be curdled by Winter, it's nice to be coddled in BOAC's fashion. You know...service and the like. No one does it quite as BOAC's Cabin Crews do. They make the "life" aboard truly pleasant. Convivial drinks. Delicious food. They're positively exuberant in their care for your comfort. Makes a vacation worth taking.

And in the brass tacks department, let's mention budget. You know, Winter is family-travel time on BOAC. We won't go into the arithmetic, but savings are impressive on the Family Fare Plan. Then, there's the 17-Day Economy Excursion Fare. Example: as little as $293. round-trip, New York-Glasgow, on the jet-prop Britannia. Hard to pass up a bargain like that. And you can even "Go Now —Pay Later".

Let your Travel Agent help you shop through the BOAC world of places to vacation this Winter. Or contact your BOAC office.

B·O·A·C **BRITISH OVERSEAS AIRWAYS CORPORATION**

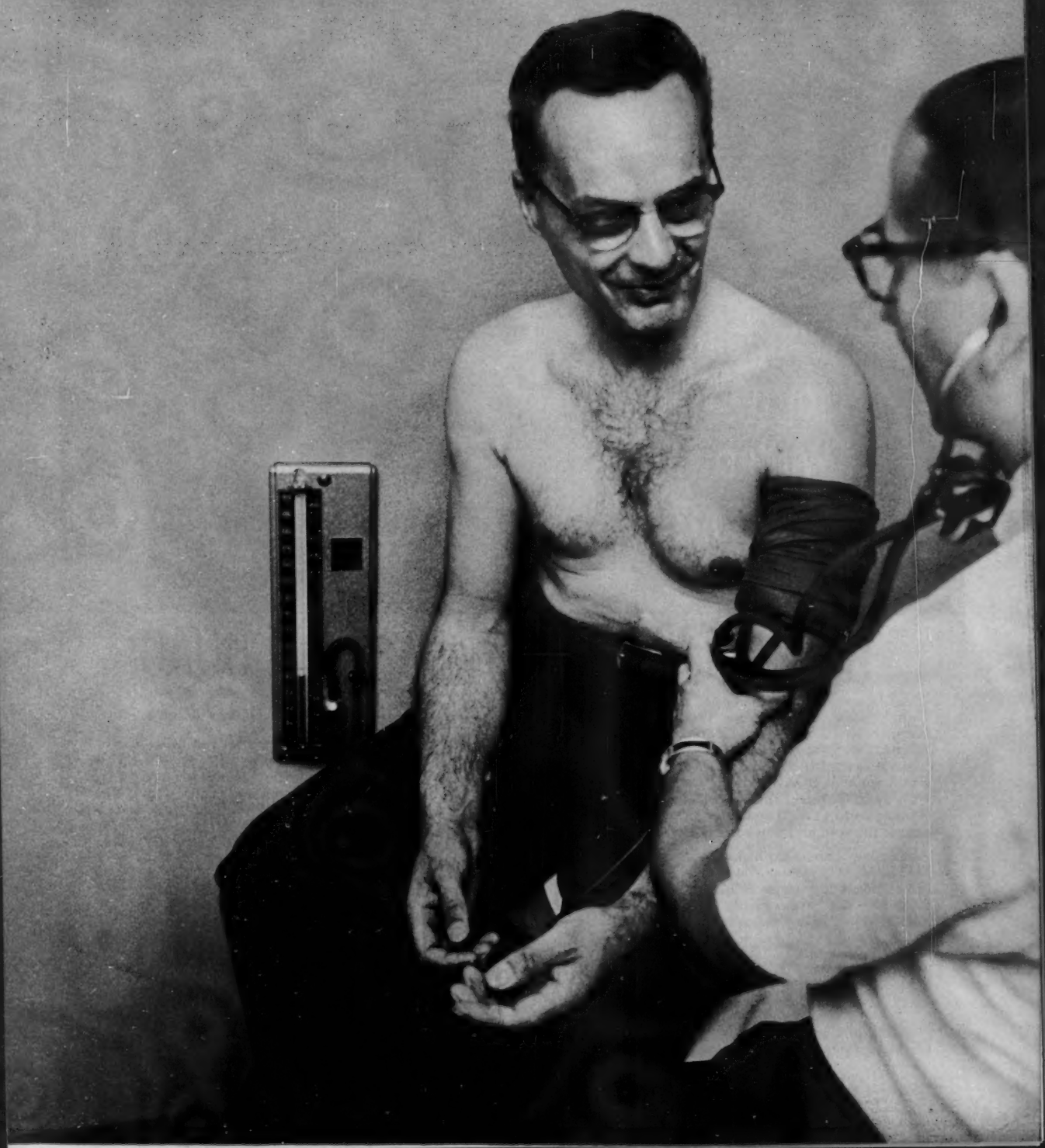
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this hypertensive patient prefers Singoserp

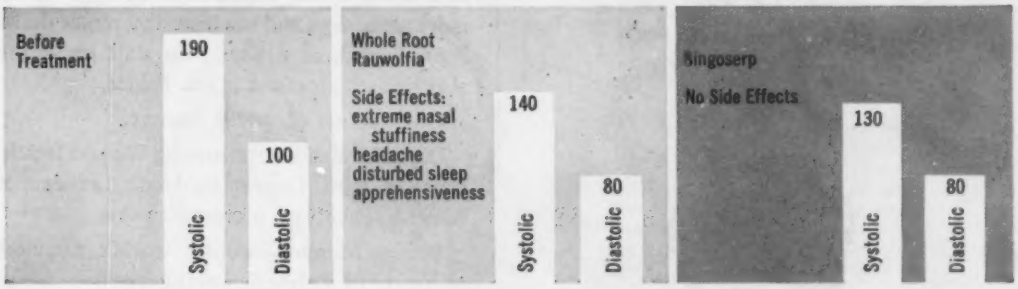
Patient's comment: "The other drug [whole root rauwolfia] made me feel lazy. I just didn't feel in the mood to make my calls. My nose used to get stuffed up, too. This new pill [Singoserp] doesn't give me any trouble at all."

Photo used with patient's permission.



...and so does his physician

Clinician's report: J. M., a salesman, had a 16-year history of hypertension and was rejected by the U.S. Army because of high blood pressure. When treated with whole root rauwolfia, patient had satisfactory blood pressure response but could not tolerate side effects. Singoserp, in a dose of 0.5 mg. daily, not only reduced patient's blood pressure still further, but did not produce any side effects.



Many hypertensive patients and their physicians prefer Singoserp® because it usually lowers blood pressure without rauwolfia side effects

SUPPLIED: Singoserp **Tablets**, 1 mg. (white, scored). Also available: Singoserp®-Esidrix® **Tablets** #2 (white), each containing 1 mg. Singoserp and 25 mg. Esidrix; Singoserp®-Esidrix® **Tablets** #1 (white), each containing 0.5 mg. Singoserp and 25 mg. Esidrix.

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the tourist traffic, as is evidenced by modern shops, a variety of restaurants, nightclubs and plush hotels.

Iolani Palace, only royal palace on American soil, is located in Honolulu. It is administration center for the state, and offices of the governor, cabinet members and other state officials are located in the Palace. However, the throne room has been preserved intact from monarchial days and is a historical center drawing thousands of visitors. The state legislature also holds its sessions at the Palace.

Other points of special interest:

Diamond Head—overlooking Waikiki Beach. Hawaii's most famous landmark, an extinct volcano resembling a crouching lion.

Bishop Museum—houses world's foremost collection of Polynesian antiquities.

Foster Botanical Gardens — rare tropical trees and plants from around the world, including a notable collection of orchids on view daily.

Honolulu Academy of Arts — appealing blend of East and West in architecture, galleries and landscaped courts. Special lectures, exhibits and concerts.

Waikiki aquarium—magnificent collection of brilliant tropical fish and marine life.

University of Hawaii campus—administration building with frescoes by Jean Charlot and others. Handsome new library. Exotic horticultural specimens such as "sausage tree."

Island of Hawaii

A diversified little "continent," the big island of Hawaii (largest of the group) offers to visitors the Hawaii National Park with its live volcanoes, the exotic black sand beach at Kalapana, gigantic fern forests, the lovely historic section of Kona, orchid gardens, lauhala crafts.

Hawaii National Park, most far-flung of the American national park chain, is located on Hawaii and Maui islands, separated by 30 miles of Pacific Ocean. The Hawaii Island portion is 31 miles from Hilo city by a fine motor highway cut through fern, ohia and gin-



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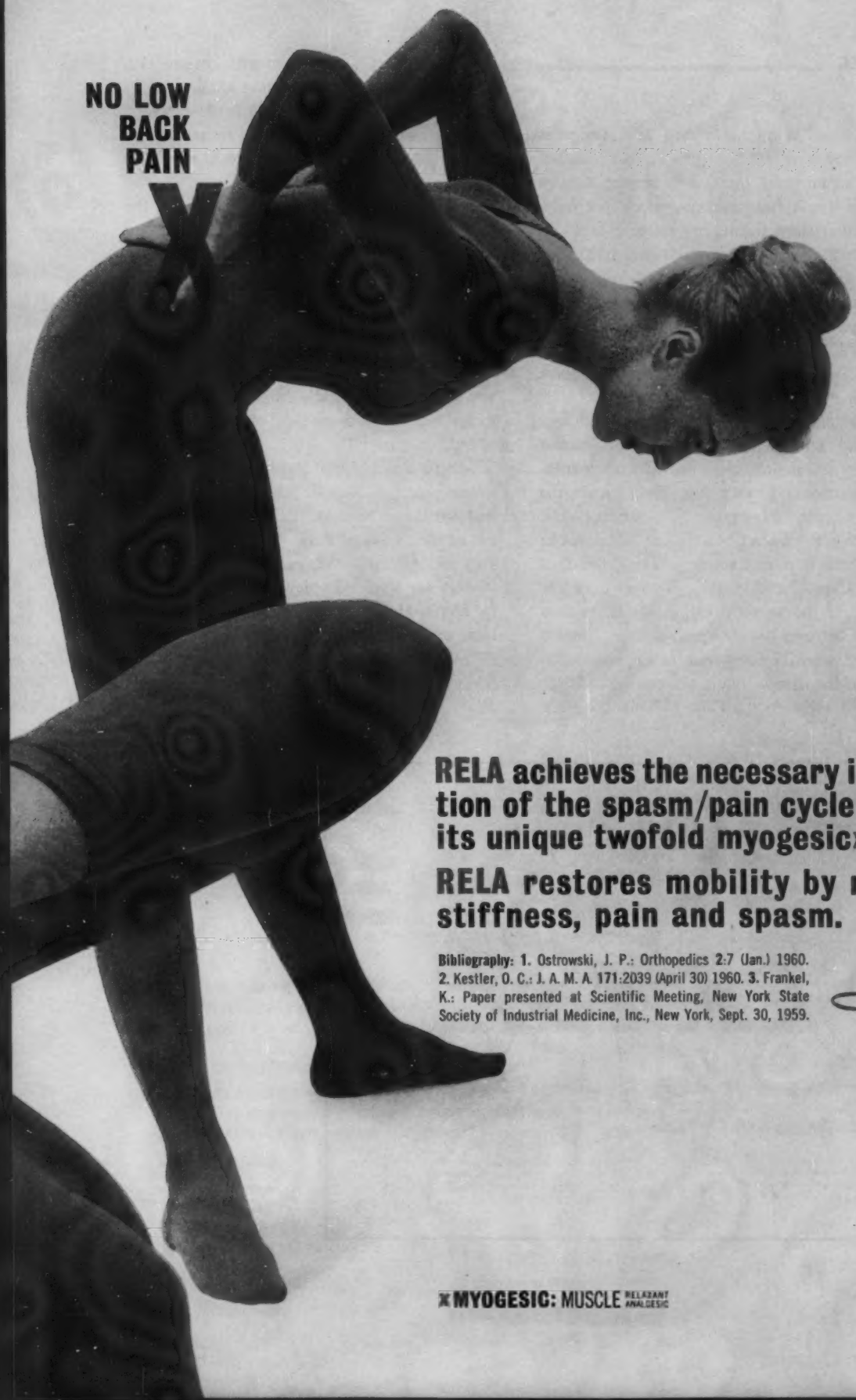
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ger forests. Within the park are fern trees (some towering 40 feet), lava tubes, sulphur banks, steam vents, the live volcano of Kilauea with its firepit Halemaumau, which put on a spectacular show during the summer of 1952. The world-famous Volcano House is located within the park and on Kilauea's brink.

Kalapana black sand beach, with its park facilities, is an attraction on the round-the-island (270 mile) trip. The jet black sand was caused by surf pounding on an ancient lava flow for many centuries.

Kona, playground of ancient Hawaiian royalty and now a favorite vacation spot for islanders and mainlanders, provides many tropical attractions: historic sites, coffee fields, the Pacific's finest fishing grounds, excellent hotels, unspoiled Honaunau beach. At Kealakekau Bay, there is a monument marking the spot where Capt. James Cook, discoverer of the islands for the western world, was killed in a conflict between his crew and natives.

The Hamakua coast, one of the most dramatic in the islands, offers visitors the old-time Waipio Valley, Akaka Falls (420 feet, highest in the territory), deeply carved gorges, rich sugar lands and little plantation hamlets.

Kamuela is the heart of the cattle ranching country. Here is Parker Ranch, second in size to the King Ranch of Texas, and hunting and horseback riding sections.

Hilo, the island's county seat and site of the largest airport on the island, is a modern city against a tropical background of luxurious gardens planted in orchids, anthuriums and other exotics that thrive in Hilo.

Volcanoes

There are five volcanoes on Hawaii Island, two of which periodically erupt to provide spectacles that draw thousands of visitors to the island.

Mauna Loa (13,680 feet high) is the second tallest point on Hawaii Island. The eruption in 1950 lasted 23 days. Kilauea, central interest of the National Park, was active in June, July and August, 1952, and drew thousands of visitors for a drive-in view of the spectacle in its firepit, Halemaumau. A brief but spectacular eruption in Halemaumau and on the Kilauea crater floor occurred in May, 1954. A major eruption took place early in the year of 1955.



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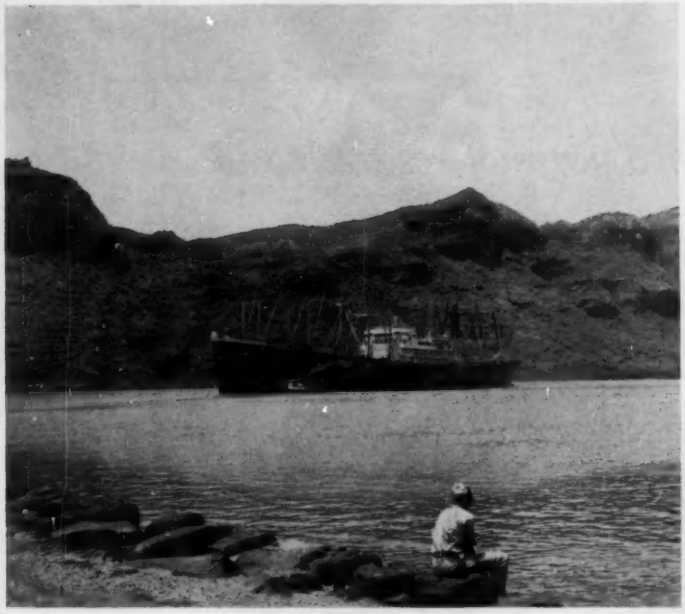
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1. Macy, I. G.; Kelly, H. J., and Sloan, R. E.: with the Consultation of the Committee on Maternal and Child Feeding of the Food and Nutrition Board, National Research Council: The Composition of Milks. Publication 254, National Academy of Sciences and National Research Council, Revised 1953. 2. Brown, G. W.; Tuholski, J. M.; Sauer, L. W.; Minsk, L. D., and Rosenstern, I.: Evaluation of Prepared Milks in Infant Nutrition; Use of the Latin Square Technique, J. Pediat. 56:391 (Mar.) 1960.

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Symbol of service in medicine



Harbor of Kauai, "Garden Island" of the Hawaiian chain. Kauai is split into two sections by steep cliffs.

Mauna Kea, 13,784 feet high; Hualalai, 8,251 feet above sea level, and Kohala, 5,505 feet high are the three major dormant volcanoes of the island. Mauna Kea is perhaps the highest island peak in the world and during winter months it is peaked with snow, drawing many local ski enthusiasts. Hualalai last erupted in 1801. Mt. Kohala is 21 miles long and 13 miles wide.

Because of her volcanoes, Hawaii is a still-growing island with periodic lava flows changing her shoreline. It is the youngest, geologically, of the Hawaiian Islands.

The Other Islands

To all islanders, *Maui* is an island of hospitality and the island's slogan "Maui no ka oi" (Maui, the best of all) is aptly chosen.

The island was named for the demi-god, Maui, whose feats have given him the modern nickname of "The St. George of Hawaii." It was Maui who fished the Hawaiian Islands from the sea; who lifted the heavens from earth to their present position; who caused the sun to slow its movements across the heavens to give us night and day, and who gave man the secret of fire-making.

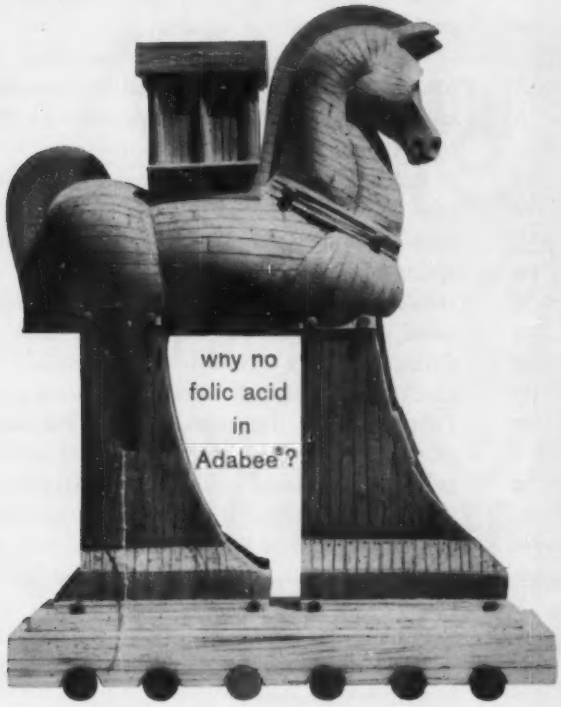
Haleakala (House of the Sun) is Maui's number one scenic attraction. Thousands of visitors make the trip to the 10,032 foot look-out by car for dramatic sunrise and sunset spectacles. Twenty-one miles around the rim, the crater itself is an adventure by horse or muleback. The Hawaii National Park (of which Haleakala is a portion) maintains cabins on the crater floor for visitors.

Hawaii's little Yosemite, the Iao Valley, is one of the attractions of Wailuku, county seat of the island. The needle-like peak, the mountain stream and the valley of Iao are among camera favorites of Maui visitors. It was in this valley that Kamehameha the Great fought and conquered the forces of the Maui chief to win the Valley Isle to the all-island kingdom that was to be ruled a century by Kamehamehas.

The scenic attractions of *Kauai,* the Garden Island of the Hawaiian chain, could be divided sharply into two parts—the Hanalei and the Waimea. Because of the location of the steep Na Pali Cliffs, Kauai does not have a highway which completely circles the island. The Haena section forms the end of the motor highway going north and northwest and Kalalau Valley the end of the west and northwest road.

Lihue, main town of Kauai, is located between these scenic sections and with the airport located at Lihue, the county seat is the start of a Kauai tour. Newspaper, radio, hotels, business and residential sections are located at

"comprehensive" multivitamins—friend or foe?



Although not itself harmful, the small amounts of folic acid in "comprehensive" multivitamins can correct significant blood disorders to confuse the diagnosis and delay the treatment of pernicious anemia victims.[1-13] Peripheral blood and bone marrow data may appear normal[1] in such patients while accompanying nerve degeneration continues. Diagnosis delayed by normal appearing indices can thus allow irreparable neurologic damage to occur before the true nature of the disease is recognized and treatment begun.[4]

To help physicians avoid this threat, Robins has formulated Adabee®, a new therapeutic multivitamin without folic acid, that is especially safe for long-term nutritional therapy in patients who require maximum support.

why no vitamin B_{12} in Adabee®?

In order to obtain therapeutic levels of specific vitamins for certain individual deficiencies, doctors must often employ a "comprehensive" multivitamin.[4,7] Many such elongated formulas include as ingredients substances which are nonessential, expensive to the patient, and irrational.[4,7,10]

On the basis that B_{12} in therapeutic vitamin mixtures has been described as needless by the A. M. A.,[2] and its unnecessary[6,10,14,15] and indiscriminate use[1] has been criticized by astute hematologists,[7] internists,[10] pathologists,[12,13] and nutritional workers,[2] this member of the B-complex has also been omitted from Adabee.

In a rational formula,[2,4,16,17] the need for hormones, enzymes, amino acids, or yeast is not supported. And since these superfluous substances might encumber the desired response to concurrently administered drugs, they are not found in the Adabee formulas.

Each yellow, capsule-shaped Adabee® tablet contains:

Vitamin A	25,000 USP units
Vitamin D	1,000 USP units
Thiamine mononitrate (B_1)	15 mg.
Riboflavin (B_2)	10 mg.
Pyridoxine HCl (B_6)	5 mg.
Nicotinamide (niacinamide)	50 mg.
Calcium pantothenate	10 mg.
Ascorbic acid (vitamin C)	250 mg.

Each green, capsule-shaped Adabee®-M tablet contains Adabee, plus nine minerals:

Iron	15.0 mg.
Iodine	0.15 mg.
Copper	1.0 mg.
Manganese	1.0 mg.
Magnesium	6.0 mg.
Zinc	1.5 mg.
Potassium	5.0 mg.
Calcium	103.0 mg.
Phosphorus	80.0 mg.

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Lihue. It is 50 minutes by plane from Honolulu.

Wailua River, near Lihue town, is the only navigable river in the Hawaiian Islands. A beautiful, historic river banked by water hyacinths and flowing from a waterfall source two miles above the Pacific Ocean, it is one of the scenic delights of Kauai.

Visitors can charter river boats for the trip up to the Fern Grotto where there are picnic facilities for those who want to spend the day fishing and swimming. The Wailua Valley was the seat of ancient Hawaiian Royalty and on the banks of the river are the remains of two important heiaus (temples).

Also, many of Hawaii's great chants were composed by inhabitants of the Wailua River. The beach where the Wailua joins the Pacific is considered one of the fine *hukilau* (group fishing) spots of the Islands.

Hanalei is the "picture land" of the Islands. The river, mountain backdrop, rice fields, red-roofed farm houses, crescent white beach and historic legendary mementos make this section one of the most attractive sections of Hawaii. At Haena, which is the end of the Hanalei road, there are the Wet and Dry Caves, said to have been the homes of the fire goddess Pele during her stay on the Garden Island.

Waimea Canyon and Kalalau Valley in northwestern Kauai are among the Islands' scenic wonders. Waimea, Hawaii's miniature Grand Canyon, is a desert scene of rich terra cotta colors, while only a few miles further there is Kalalau Valley which boasts of lush vegetation, white beach and blue Pacific. Kalalau was at one time the site for a Hawaiian village. However, in the march of civilization, the Valley proved too difficult to reach—only entrances are by sampan from the sea or difficult foot or horseback trail. The hunting is excellent in the valley and draws many special parties of hardy sportsmen.

Part of *Molokai,* fifth largest of the islands, is accessible only by boat and provides some of Hawaii's most beautiful tropical scenery. Halawa Valley, one of the island's most picturesque, may be reached by motor road, but the deep valleys that cut into the cliffs of the northern side can be enjoyed only from the air or from offshore.

Kalaupapa, the Hansen's disease colony, is located on a peninsula flanked by towering cliffs and the sea. The hamlet provides a striking panorama from the cliff lookout.

Legendary and historic mementoes are plentiful on the little island shaped like a wooden shoe. Among these spots are: The famous spring of Kalae; hill of the caterpillar god at Hoolehua where the airport is located; Kaunakakai, beach home of Kamehameha V who during his reign (1830-1872) maintained a ranch on the island; the ancient taro patch near Pukoo; hill of the shark god at Pauwalu; sacred kukui grove at Halawa; city of refuge at Kawela; Kaluaaha Church built at Mapulehu in 1932; bronze plaque near Kamalo marking the landing spot of Smith and Bronte, first to fly the California-Hawaii route; ancient heiau (temple) at Mapulehu.

Fishing villages located between Kaunakakai and Halawa Valley are particularly interesting to camera enthusiasts.

Fishing Grounds

Most popular fishing grounds in Hawaii are out of Honolulu, Oahu island, and Kailua, Kona, Hawaii island.

Boats out of Honolulu range over the Molokai channel to just offshore Molokai and Lanai islands, or along leeward Oahu to Kaena point. In October of 1954 marlin were running within one mile of Honolulu harbor, and in the same month the grounds off Kokohead produced the

TO OUR READERS: You are avid travelers—as statistics show—taking trips for pleasure and relaxation as well as to attend professional meetings in this country and abroad. In addition, you often prescribe travel for your patients. Thus, the purpose of this department is to give you concise, practical information about one of your strong interests—travel. As a special service, this section will carry each month a calendar of important forthcoming national and international medical meetings.

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world's record black marlin, 1002 pounds.

The Waianae grounds, off the lee coast of Oahu, are recommended for marlin and Allison tuna. They can be reached by boat from Honolulu; or special arrangements can be made for car transportation from Honolulu to Waianae where fishermen meet their charter boats and eliminate two to three hours' running time.

Penguin Bank is a 30-fathom shoal extending 27 miles southwest of Molokai. It is reached by boat from Honolulu. Seas are choppy, but fishing is generally good. All types of Hawaii's offshore fish are found there.

Kailua boats go along 150 miles of the Kona coast, on the western side of Hawaii. The Kona coast of the island of Hawaii is prime marlin ground. Smooth seas and the possibility of record marlin make it a favorite fishing spot. Too far away for a one-day boat trip from Honolulu and back, it is reached by plane either directly from Honolulu or by way of Hilo.

Some fishermen have brought back excellent catches from the waters off Hana, on the east coast of Maui. Seas are sometimes rough. Hana is reached by plane directly from Honolulu or by car from central Maui.

Fishing is good in the rough waters off the north coast of Kauai, and off the small, privately-owned island of Niihau. These are reached by specially arranged charter from Honolulu.

Varieties of Fish

In general, most of the common species of game fish can be found almost anywhere in the Hawaiian chain, depending on the individual topography of the bay, channel or bank. Fishing off the north and northeast sides of all islands tends to be good most of the time. Seas, driven by the prevailing trade winds, are often rough. On the other hand, some of these areas, seldom fished, sometimes offer tremendous catches. The wisest course is to make individual on-the-spot area arrangement with charter boat skippers, who keep up with current catches and weather conditions.

Principal gamefish of Hawaii are marlin, wahoo, barracuda, skipjack and yellow-fin tuna, dolphin, bonito and Jack-Crevally (African pompano).

Sailfish occasionally are taken and that fish of the experts, bonefish, are brought in frequently by those who go in special search of them.

From a size standpoint, the marlin is king. Since warm currents keep Hawaiian waters comfortable the year around, marlin do not migrate from the islands and are taken any season.

Hawaii, the only place in the world where marlin are caught commercially, has seen some monsters unloaded for the oriental fishcake factories. One black marlin weighed in at 2600 pounds, and another was so large it had a 150 pound tuna in its stomach.

However, average sportsfishermen's catch is a 150 or 200-pounder. Winning marlins in island contests generally are 500-pounders, and every now and then a lucky visitor boasts a striped marlin of 600 pounds up to 800 pounds.

DEEP SEA CHARTER BOATS

Fishing boats operate in Hawaiian waters the year round and charter trips are available any season.

Average price per person for a day's outing is $17.50, including boat, tackle and bait, on a full-base charter. Food and drink are supplied by the fisherman, but ice and galley services are available. Usually the minimum number is two persons. Kona fishing boats are available at $75 per day (full day charter) or $45 per half day.

Pre-vacation correspondence is recommended to insure space at the exact time preferred. Hawaiians themselves are avid fishermen and an unexpected run of any of the big-game fish quickly draws them away from their offices and shops down to the docks for impromptu trips.

For more information write:

INTER - ISLAND RESORTS, LTD., 305 Royal Hawaiian Ave., Honolulu; or SPORTS FISHING HAWAII, 1078 Ala Moana Blvd., Honolulu.

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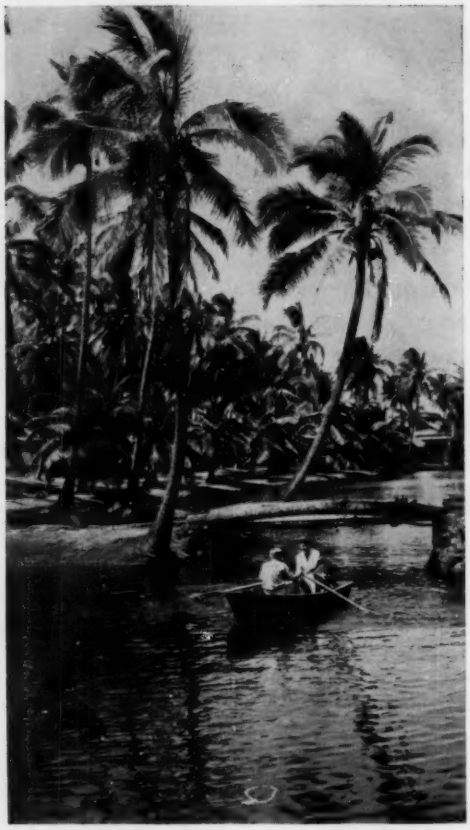
DOSAGE: The recommended daily dosage is: For infants and children under six, 0.6 cc. to ½ teaspoonful. For children six to twelve, ¼ to 1 teaspoonful. For adults, 1 or 2 teaspoonfuls. Supplied: 8 oz. bottles.

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Jefron™ Elixir

Jefron Elixir is so palatable and so well tolerated that it is acceptable to almost all patients.



Quiet lagoon on Kauai. Another scenic waterway here is the Wailua River, popular for boat trips.

In addition to black, blue, and striped marlin, Hawaii also has white or silver marlin.

About as tough a fighter as the marlin is Hawaii's favorite eating fish, the mahimahi or dolphin. Average size taken by sportsmen is about 25 pounds, but 65-pounders have been brought in by trollers.

Biggest of the island tuna is the Allison or yellow-fin. Hawaii for years has held the 80-pound test world record—265 pounds. An island woman landed a 225-pounder for a new women's world's record.

Record wahoo also have been caught in Hawaiian waters. Some of these fast-striking fish top 100 pounds. Average size is 40 to 50 pounds.

Barracuda from 40 to 50 pounds are brought in regularly. Surfcasters in the right spot at the right time have landed 100-pounders.

Jack-Crevally generally scale 50 or 60 pounds, although the island shorecasting record is nearer 150 pounds. Trolling fishermen find them along rocky shores, often in pairs for double strikes.

Bonefish, called *oio* by the natives, also come big in Hawaii. A 1954 record was recently topped by one pound, the new catch tipping the scales at 18½ pounds. Special hooks have been designed by Hawaii fishermen, permitting bonefishing over coral without fouling.

Bonito, interesting prey for light tackle addicts, run from about three to 30 pounds.

In all, Hawaii has approximately 650 species of fish. Since many of them have Hawaiian and Japanese names as well as English, visiting fishermen sometimes get a little confused along the waterfront. But all charter boat skippers know the universal common names, and vacationers have no difficulty in getting across the type of fish they're after.

Freshwater Fishing

Three species of freshwater fish have been introduced into Hawaii in recent years, and all have become fairly well established.

Rainbow trout have been planted in the mountain streams of Kokee, on the island of Kauai. The season generally lasts from June to August inclusive; the limit is 10 fish per day, and the minimum size is 6 inches. Joseph Souza, manager of the Kokee territorial park area, keeps himself well informed on the individual fishing areas. He maintains headquarters in the park and can give on-the-spot suggestions.

The season on largemouth black bass is open all year. Daily limit, 10 fish; minimum size 9 inches. These can be found in streams, estuaries, and reservoirs on Oahu, Kauai, Hawaii, and Maui.

A third introduced fish is the bluegill sunfish. The season is open all year, the daily limit is 20 fish, and the minimum size is 4 inches. These inhabit streams, reservoirs, and estuaries on Oahu, Kauai and Maui, and have recently been introduced on Hawaii and Molokai.

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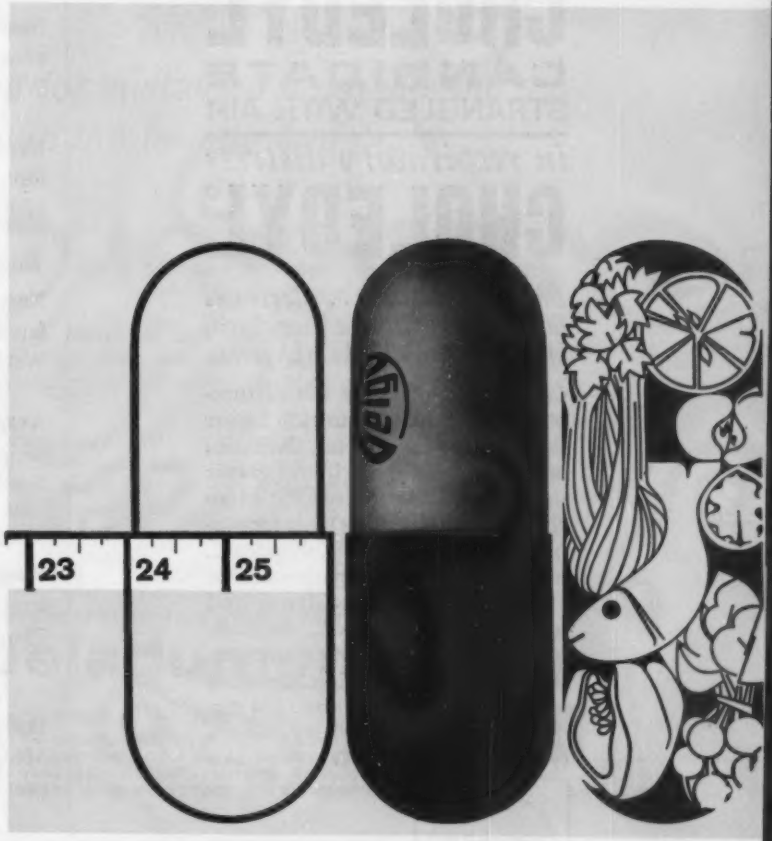
Prelu-Vite™

brand of phenmetrazine HCl with vitamins and minerals

Now, Prelu-Vite helps to fortify the patient's nutritional status and sense of well-being without jeopardizing the success of the weight-reducing program.

By improving nutritional status Prelu-Vite makes it easier for the patient to retain the initial zeal for reducing...facilitates the retention of enthusiastic cooperation in pursuing therapy to a successful conclusion.

With Prelu-Vite, as with Preludin, a weight loss 2–5 times that obtainable by dietary restriction alone, is readily achieved without the occurrence of annoying side reactions.



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Availability:
Prelu-Vite™ Capsules, each containing 25 mg. of Preludin (brand of phenmetrazine HCl) with vitamins A, B, C and D and 5 minerals.
Under license from C. H. Boehringer Sohn, Ingelheim.

Also available:
Preludin® Endurets®-prolonged-action tablets (75 mg.) for once daily administration; and as regular Preludin tablets (25 mg.) for b.i.d. or t.i.d. administration.

Geigy, Ardsley, New York

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CHOLEDYL
CANDIDATE
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in respiratory distress
CHOLEDYL®
Brand of oxtriphylline

betters breathing . . . decreases wheezing in chronic bronchitis, chronic asthma and emphysema

Choledyl, the choline salt of theophylline, produces up to 75% higher theophylline blood levels than does oral aminophylline, without gastric upset. The superior specific bronchodilator, Choledyl is basic for prophylaxis or treatment of dyspnea... has no sedative or sympathomimetic effects... reduces incidence and severity of acute attacks... decreases need for secondary medication... retains effectiveness during long-term administration. *Usual dose:* 200 mg. q.i.d. *Supplied* as 200 mg. tablets (yellow), bottles of 100. APO18

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Calendar of Meetings

DECEMBER

Nassau, Bahamas. Bahamas Surgical Conference, Dec. 27-Jan. 14. *Contact:* Mr. Irvin M. Wechsler, P.O. Box 1454, Nassau, Bahamas.

New York, N. Y. Academy of Psychoanalysis, Dec. 10-11. *Contact:* Dr. Joseph H. Merin, 125 E. 65 St., New York 21, N. Y.

JANUARY, 1961

Nassau, Bahamas. Bahamas Serendipity Conference, Jan. 15-28. *Contact:* Mr. Irvin M. Wechsler, P.O. Box 1454, Nassau, Bahamas.

Acapulco, Mexico. International Fertility Association, Jan. 28-31. *Contact:* Dr. M. Leopold Brodny, 4646 Marine Dr., Chicago 40, Ill.

FEBRUARY

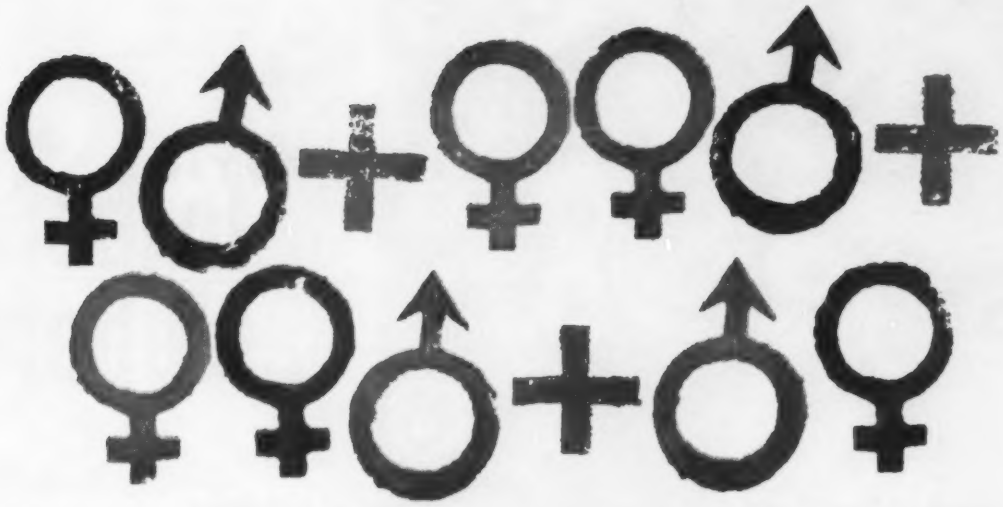
Washington, D. C. American Academy of Allergy, Feb. 6-8. *Contact:* Mr. James O. Kelly, 756 N. Milwaukee St., Milwaukee 2, Wis.

MARCH

Dallas, Texas. American College of Allergists, Mar. 12-17. *Contact:* Dr. Howard G. Rapaport, 16 E. 79 St., New York City, N. Y.

APRIL

Nassau, Bahamas. Bahamas Medical Conference, April 3-15. *Contact:* Mr. Irving M. Wechsler, P.O. Box 1454, Nassau, Bahamas.



especially designed for sustained anabolic and climacteric therapy in the female and male . . .

Deladumone

SQUIBB TESTOSTERONE ENANTHATE AND ESTRADIOL VALERATE

• relieves physical, mental and emotional distress in the climacteric and helps to correct hormonal imbalance and protein loss • minimizes or eliminates unwanted sexual effects • well tolerated and convenient administration — low viscosity permits easy IM injection with small-gauge needle.

DELADUMONE is indicated in the menopausal syndrome, in osteoporosis (postmenopausal, senile). **Dosage** 1 to 2 cc. as a single intramuscular injection, every 3 or 4 weeks, depending on clinical response. **Supply** Vials of 1 and 5 cc. Each cc. contains 90 mg. testosterone enanthate and 4 mg. estradiol valerate.

especially designed for convenient inhibition of lactation and prevention of breast engorgement

Deladumone 2X

SQUIBB TESTOSTERONE ENANTHATE AND ESTRADIOL VALERATE

• ***optimally balanced — long-acting — double potency***

Dosage: In the suppression of lactation, 2 cc. given as a single intramuscular injection, preferably at the end of the first stage of labor or else immediately upon delivery. Supply: Each cc. contains 180 mg. testosterone enanthate and 8 mg. of estradiol valerate dissolved in sesame oil. Vials of 2 cc.

SQUIBB *Squibb Quality—the Priceless Ingredient*

"DELADUMONE"® IS A SQUIBB TRADEMARK



MODERN THERAPEUTICS

New therapies and significant clinical investigations abstracted from other journals.

Shigellosis Treated with Sulfadimethoxine

In the presence of an outbreak of shigellosis in a school for mentally-retarded boys, the effectiveness of sulfadimethoxine (Madribon) was tested. From its known characteristics, the drug seemed well suited for use in this type of institution, requiring once-a-day administration, and being lower in cost. The drug was used as a therapeutic and a prophylactic agent. Stool cultures were obtained both before and after therapy. After initial cultures, sulfadimethoxine was given to children under 80 pounds in weight in a dosage of 0.5 Gm., twice daily for two days, and 0.5 Gm. daily for the following eight days. Children weighing more than 80 pounds received twice the amount of the drug. The majority of the patients were clinically well within four days following therapy, and all had normal temperatures and absence of diarrhea within eight days. If the examination of the stool after therapy indicated a positive culture, a second course of sulfadimethoxine was administered. After this course all cultures were negative. Sixty-nine children received Madribon initially; in two patients the drug was withdrawn due to side-effects; in seven children showing a positive culture, the course was repeated. The drug appears to be an effective agent for mass treatment and prophylaxis, and one which may be used without fear of toxic reactions.

G. D. LaVECK, M.D., et al.
Antibiotic Med. and Clin. Ther. (1960)
Vol. 7, No. 2, P. 119

Treatment of Ambulatory Hypertensive Patients

It has been evident that a definite need exists for a drug of the Rauwolfia class which possesses equal antihypertensive activity but fewer side-effects. With this in mind, syrosingopine, a synthetic analog of reserpine, was developed. The new drug was administered to a group of 64 hypertensive patients in a dosage of 1 mg. of syrosingopine four times daily. If, after a period of two to three weeks, a satisfactory antihypertensive effect had not been obtained the amount of the dosage was doubled. When a satisfactory blood-pressure control was obtained, the decrease in dosage was individualized. If required control was not obtained, hydralazine was added to the regimen. As might be expected, the patients with the milder degrees of hypertension responded most favorably, 70 percent demonstrating a satisfactory reduction in blood pressure. In the severely affected patients, only 15 percent achieved favorable results. The effectiveness of antihypertensive medications is limited by their pharmacologic by-effects and toxicity, and syrosingopine is singularly free of both. Symptoms of nasal congestion, fatigue and mental depression did not return after an interruption in therapy. The combination of hydralazine with reserpine has an accepted place in antihypertensive therapy. Blood pressure reducing effect of the combination has

Continued on page 176a

Hard filled capsules in bottles of 30.



4 mg.

Medrol* Medules†

pH-patterned slow release...

not here at pH 1.2

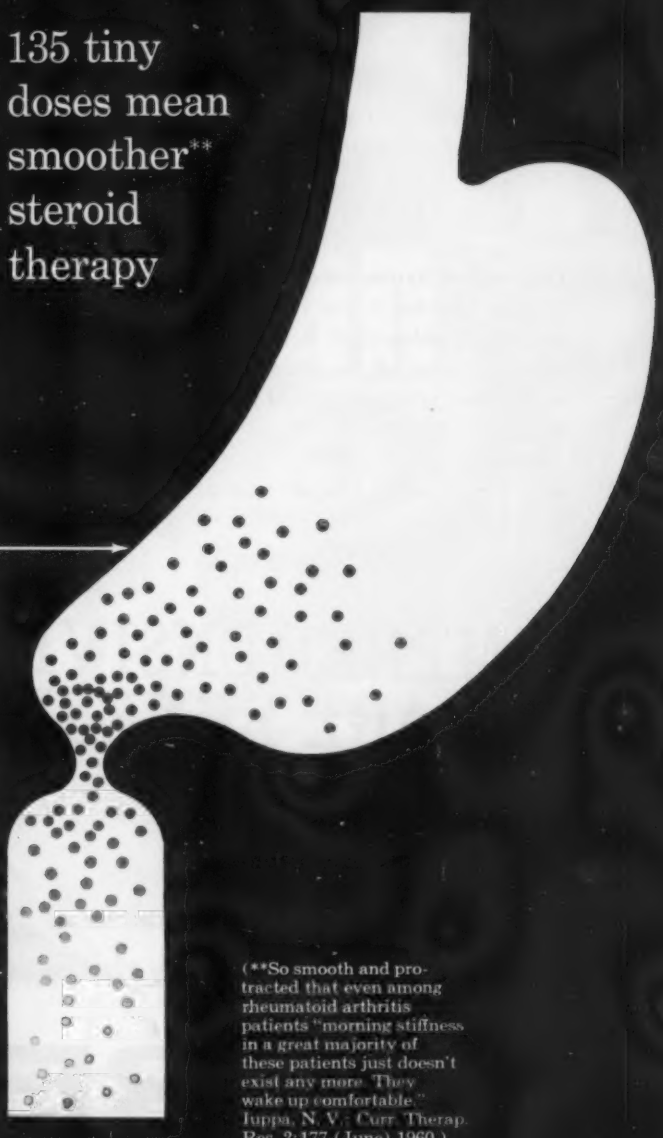
In the relatively acid medium of the fasting stomach, Medules are kept essentially intact by their special pH-sensitive coating (about 5% of Medrol content released in 2 hours at pH 1.2).

but here at pH 7.5

In the environment of the duodenum (at pH of approximately 7.5) 90% to 100% of the Medrol content is released within 4 hours.

...means gradual steroid absorption

135 tiny doses mean smoother** steroid therapy



(**So smooth and protracted that even among rheumatoid arthritis patients "morning stiffness in a great majority of these patients just doesn't exist any more. They wake up comfortable." Iuppa, N. V.: Curr. Therap. Res. 2:177 (June) 1960.)

Medrol hits the disease, but spares the patient

Upjohn The Upjohn Company Kalamazoo, Michigan

*Trademark, Reg. U. S. Pat. Off.— methylprednisolone, Upjohn

†Trademark

been shown to be greater than that of either agent when used alone. Since the incidence of side-effects with syrosingopine is less than with reserpine, it was logical to combine it with hydralazine.

RICHARD A. DUNSMORE, M.D., et al.
Amer. J. of the Med. Sci. (1960)
Vol. 239, No. 2, P. 148

Chlorophyll Synthesized

R. B. Woodward, the Harvard chemist, has synthesized chlorophyll a, the complex green coloring matter of the plant world, and one of the most common organic molecules found in nature. So far, about six hundred-thousandths of an ounce of the green chemical have been made in Harvard's Converse Memorial Laboratory.

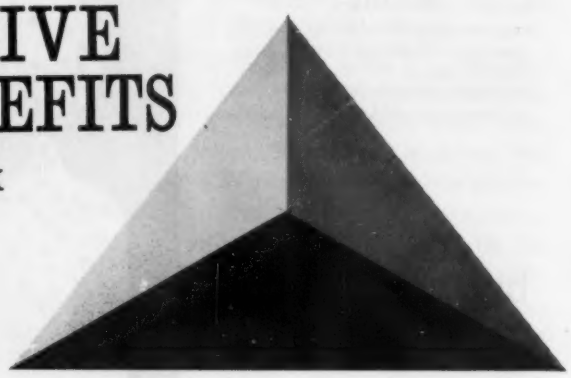
The synthesis proves once and for all the structure of chlorophyll, slowly derived during the past 40 years by chemists in many countries. The work also adds much new knowledge about the chemistry of chlorophyll, which may help biologists to understand how this molecule enables plants, during photosynthesis, to capture the sun's energy and store it in sugars. That chlorophyll has now been made in the laboratory does *not* mean that man will soon be able to duplicate in the test tube the complex process of photosynthesis.

To construct chlorophyll, the investigators started with simple substances, readily made in the laboratory, and proceeded step by step, to attach atoms or groups of atoms in definite arrangements. As an example, one of the last steps in the synthesis of chlorophyll a was to add two hydrogen atoms at a certain position

Continued on page 179a

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▲ brightens the outlook
▲ lightens the load of poor nutrition
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NEW 1 small capsule every morning

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Geriatric Vitamins-Minerals-Hormones-d-Amphetamine Lederle

Each capsule contains: Ethinyl Estradiol 0.01 mg. • Methyl Testosterone 2.5 mg. • d-Amphetamine Sulfate 2.5 mg. • Vitamin A (Acetate) 5,000 U.S.P. Units • Vitamin D 500 U.S.P. Units • Vitamin B_{12} with AUTRINIC® Intrinsic Factor Concentrate 1/15 U.S.P. Unit (Oral) • Thiamine Mononitrate (B_1) 5 mg. • Riboflavin (B_2) 5 mg. • Niacinamide 15 mg. • Pyridoxine HCl (B_6) 0.5 mg. • Calcium Pantothenate 5 mg. • Choline Bitartrate 25 mg. • Inositol 25 mg. • Ascorbic Acid (C) as Calcium Ascorbate 50 mg. • l-Lysine Monohydrochloride 25 mg. • Vitamin E (Tocopherol Acid Succinate) 10 Int. Units • Rutin 12.5 mg. • Ferrous Fumarate (Elemental Iron, 10 mg.) 30.4 mg. • Iodine (as KI) 0.1 mg. • Calcium (as $CaHPO_4$) 35 mg. • Phosphorus (as $CaHPO_4$) 27 mg. • Fluorine (as CaF_2) 0.1 mg. • Copper (as CuO) 1 mg. • Potassium (as K_2SO_4) 5 mg. • Manganese (as MnO_2) 1 mg. • Zinc (as ZnO) 0.5 mg. • Magnesium (MgO) 1 mg. • Boron (as $Na_2B_4O_7.10H_2O$) 0.1 mg. Bottles of 100, 1000.

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

alert tranquillity



a new, improved, more potent relaxant for anxiety and tension

Clinical reports indicate:

- **effective in half the dosage required with meprobamate**
- **significantly less drowsiness than with meprobamate, phenothiazines, or the psychosedatives**
- **does not impair intellect, skilled performance, or normal behavior in recommended dosage**
- **neither depression nor clinically significant toxicity in recommended dosage**

STRIATRAN is indicated in anxiety and tension, occurring alone or in association with a variety of clinical conditions.

Usual Adult Dosage: One tablet three times daily, preferably just before meals. In insomnia due to emotional tension, an additional tablet at bedtime usually affords sufficient relaxation to permit natural sleep.

Supply: 200-mg. tablets, coated pink, bottles of 100.

While no absolute contraindications have been found for STRIATRAN in the recommended dosage, the usual precautions and careful supervision required with all new and potent drugs should, of course, be observed.

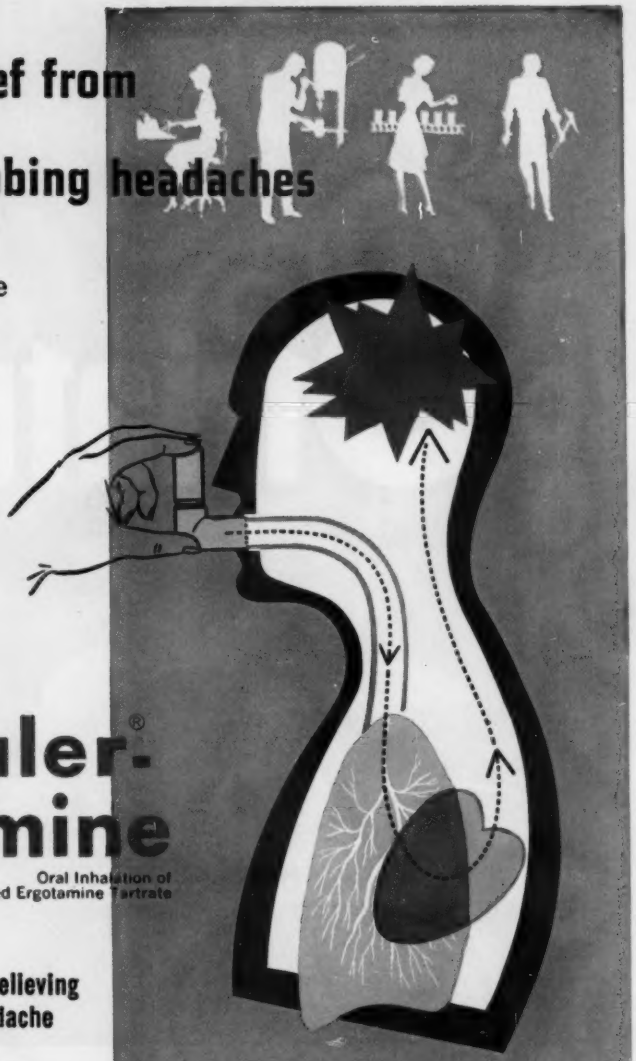
Additional information available to physicians on request; write Professional Services, Merck Sharp & Dohme, West Point, Pa.

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STRIATRAN IS A TRADEMARK OF MERCK & CO., INC.

on-the-go relief from recurrent throbbing headaches

including migraine syndromes, other vascular headaches, histaminic cephalalgia, and occipital neuralgia



Medihaler®-Ergotamine

Oral Inhalation of Micronized Ergotamine Tartrate

Fastest overall method for relieving recurrent throbbing headache

Approximates speed and predictability of relief following ergotamine injection.

Eliminates delay in treatment...Medihaler travels *with* the patient...ready and in use in 5 seconds!

"In a series of over 300 episodes of vascular headache in 41 patients 'Medihaler'-Ergotamine was effective in about 70%."

Graham, J.R.: Faulkner Hospital, Jamaica Plains, Boston.

Dosage: A single inhalation at onset of headache. Additional inhalations should be spaced not less than 5 minutes apart. Not more than 6 inhalations in any 24-hour period.

In 2.5 cc. stainless steel vial (50 doses) with plastic oral adapter. Each depression of metering valve delivers 0.36 mg. ergotamine tartrate self-propelled from the oral adapter.

Riker Northridge, California

on the molecule and at no other position.

The art of organic synthesis has greatly benefited from the years of work carried out in the synthesis of chlorophyll. Every new synthesis successfully completed not only increases knowledge about the chemistry of the substances involved, but adds to the great pool of techniques which chemists draw upon to build up other molecules.

The work was supported by the National Institutes of Health, the National Science Foundation, and the Research Corporation.

Hypoglycemic Agents in the Treatment of Diabetes

Multiple hypoglycemic agents are responsible for a radical change in the treatment of diabetes. At the same time, there is evidence that the use of these agents may not offer the best treatment for individual patients. The cornerstone of proper treatment is a diet properly correlated to the patient's weight, height, sex, physical activities, and severity of diabetes. If diet fails to provide good control, an important weapon is insulin. The various insulins, however, must be properly utilized if their full value is to be obtained. It is not advisable to use more than 60 to 70 units of any insulin or mixture in one dose. In juveniles, good control should be possible with two doses daily, about two-thirds before breakfast and one-third before the evening meal. In recent years orally administered hypoglycemic drugs have been made available. These drugs belong to the sulfonylurea group and seem to act by stimulation of the beta cells of the pancreas to produce further insulin. It has been stated that best results may be expected in the nonketotic, asymptomatic diabetic of nearly normal weight, over 40 years of age, and taking less than 40 units of insulin daily. Another orally administered hypoglycemic agent—phenformin—a biguanide, has successfully replaced as much

Continued on the following page

Coming next month

- *The Family Physician and the Unwed Mother*
  By Albert S. Norris, M.D., Assistant Professor of Psychiatry, Department of Psychiatry, University of Iowa, Iowa City, Iowa and the State Psychopathic Hospital.
- *Cause and Treatment of Hospital Overuse*
  By Allen A. Parry, M.D., Madison, New Jersey.
- *Cutaneous Reactions to Light*
  By Mark Allen Everett, M.D., Assistant Professor, Department of Dermatology University of Oklahoma School of Medicine, Oklahoma City, Oklahoma.
- *Office Management of Diabetes Mellitus*
  By Albert Weinstein, M.D. and Ben J. Alper, M.D., Nashville, Tennessee.
- *The Child with Congenital Heart Disease*
  By Carolyn M. McCue, M.D., Interim Chairman, Department of Pediatrics, Medical College of Virginia, Richmond, Virginia.
- *Local Anesthetic Drug Reactions*
  By Cyril Taylor, M.D., Assistant Professor, Department of Anesthesiology, Indiana University Medical Center, Indianapolis, Indiana.
- *Clinical Cardiology in the Geriatric Age Group*
  By Thomas C. Gibson, M.D., Department of Medicine, University of North Carolina, Chapel Hill, North Carolina.
- *Electrocardiography for Non-Electrocardiographers*
  By Thomas N. James, M.D., Chairman, Section on Cardiovascular Research Henry Ford Hospital, Detroit, Michigan.
- *The G. P. and the Psychiatric Referral*
  By Frank Orland, M.D., Department of Psychiatry, School of Medicine University of Pennsylvania, Philadelphia, Pennsylvania.
- *The Physician in Today's Hospital*
  By William A. Kozma, M.D., Administrator of Brookhaven Memorial Hospital, Patchogue, New York.

as 70 units of insulin daily, apparently with few side-effects. Its site of action seems to be in the enzymatic cycle, and it is believed to increase the peripheral utilization of glucose. Phenformin possibly has a role that is not fulfilled by diet, insulin or sulfonylureas in the truly labile diabetic, and is also useful as an adjunct to insulins of other types. This agent, however, may produce severe gastrointestinal distress, a fact to be kept in mind in connection with its use. In general, each case of diabetes must be carefully studied in order to provide the patient with the hypoglycemic agent or combination of agents best suited to his particular needs.

FRANK S. PERKIN, M.D.

J.A.M.A. (1960) Vol. 173, No. 1, P. 36

Circulatory Action of Nylidrin Hydrochloride

Nylidrin has been reported as being a useful agent for increasing the circulation to the peripheral muscular areas of the body, and this type of drug is needed for treating ischemic night pain and intermittent claudication. The authors describe the circulatory effects of nylidrin hydrochloride (Arlidin) and its use in the management of peripheral and cerebral arterial insufficiency. Twenty-five ambulatory patients with arteriosclerosis involving the lower extremities were studied: all had intermittent claudication and other symptoms of ischemia of the limbs. Parenteral studies were made before and after 5 mg. of nylidrin intramuscularly and intravenously. In addition, 20 patients were given nylidrin orally—6 mg. three times daily. Five members of the group had lightheadedness or vertigo, mental confusion or diplopia, murmurs over the carotid arteries or other evidence of cerebral vascular insufficiency; following the administration of nylidrin the symptoms were partially alleviated. The injections were well tolerated; there was no thrombosis at the site of injection nor was

Continued on page 182a



while they are planning
their family

they need your help
more than ever



the most widely prescribed contraceptive

WHENEVER A DIAPHRAGM IS INDICATED



no asthma symptoms

Tedral helps asthma patients breathe normally—live actively—avoid the fear and embarrassment of disabling attacks. 1 or 2 tablets q.4h. provide up to 4 hours' freedom from congestion and constriction of asthma.

TEDRAL®

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MORRIS PLAINS, N.J.

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to NORMALIZE bowel function;



It has been shown[1] that the colon resumes a more normal peristaltic pattern[2] when it is supplied with a stool of medium soft consistency of sufficient bulk,[3] especially if the indigestible portion of that bulk consists primarily of hemicellulose.[4] To provide smooth bulk —L. A. Formula—effective,[5] palatable, economical.

1. *Dolkart, Dentler & Barrow, Ill. Med.J., 90:286, 1946*
2. *Adler, Atkinson & Ivy, Am.J. Digest.Dis. 8:197, 1941*
3. *Wozasek & Steigman, Am.J. Digest.Dis. 9:423, 1942*
4. *Williams & Olmstead, Ann.Int. Med. 10:717, 1936*
5. *Cass & Wolf, Gastroenterology, 20:149, 1952.*

*Abbreviation for the Latin "Levis Amplitudo", meaning smooth bulk.



YOUR PATIENTS WILL APPRECIATE THE MODEST COST!

made since 1932 by

BURTON, PARSONS & COMPANY

Originators of Fine Hydrophilic Colloids

WASHINGTON 9, D. C.

there evidence of venous irritation. The oral doses employed did not produce gastrointestinal symptoms. Postural hypotension was not encountered in any case. Angina pectoris was not aggravated. The drug was of particular value clinically in relieving some of the symptoms of cerebral vascular insufficiency, and night cramps of ischemic origin. Improvement from intermittent claudication was difficult to evaluate. Nylidrin hydrochloride appears to have a definite field of usefulness.

TRAVIS WINSOR, M.D., et al.
Am. J. of the Med. Sci. (1960 Vol. 239, No. 5, P. 594

Acute Respiratory-Tract Infections Treated with Combined Therapeutic Agents

In the laboratory, combinations of antibiotics have been shown to delay or prevent the emergence of resistant strains of pathogens, and certain combinations have shown enhanced activity against specific pathogens. One of the uses in which the value of combined therapy has been demonstrated is in the treatment of tuberculosis. The author conducted his own study of combined therapy in cases of acute respiratory-tract infections: the agent used was oleandomycin and glucosamine-potentiated tetracycline (Cosa-Signemycin). In the group treated, were 60 patients suffering from asthmatic, and obstructive bronchitis, pharyngitis, emphysema, bronchiectasis and several other respiratory-tract infections. Forty-two of the patients had multiple infections. Thirty-one patients had had prior therapy with one or more antibiotics to which they had failed to respond: 29 patients had not received prior antibiotic therapy. One gram of Cosa-Signemycin was administered daily in four divided doses for four days. In response to treatment, 58 patients were improved or cured. One patient of the "treated" and one of the "untreated" group failed to respond. Mild side-effects of short duration were experienced by 14 patients who did not require withdrawal of

Continued on page 184a

this hypertensive patient prefers Singoserp... and so does his physician

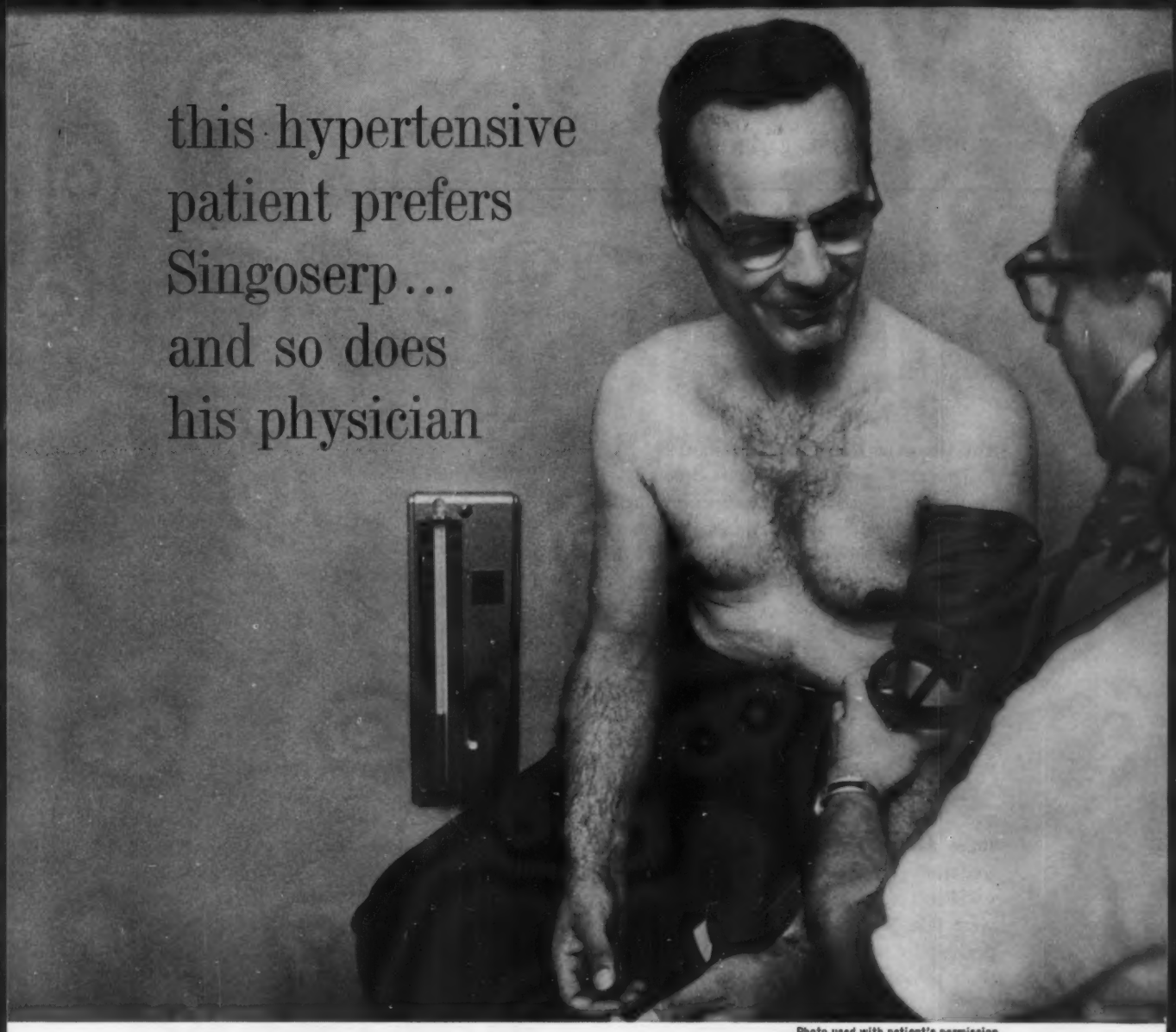


Photo used with patient's permission.

Patient's comment: "The other drug [whole root rauwolfia] made me feel lazy. I just didn't feel in the mood to make my calls. My nose used to get stuffed up, too. This new pill [Singoserp] doesn't give me any trouble at all."

Clinician's report: J. M., a salesman, had a 16-year history of hypertension. Blood pressure at first examination was 190/100 mm. Hg. Whole root rauwolfia lowered pressure to 140/80—but side effects were intolerable. Singoserp, 0.5 mg. daily, further reduced pressure to 130/80 and eliminated all drug symptoms.

Many hypertensive patients and their physicians prefer Singoserp® because it usually lowers blood pressure without rauwolfia side effects

SUPPLIED: Singoserp **Tablets,** 1 mg. (white, scored). Also available: Singoserp®-Esidrix® **Tablets** #2 (white), each containing 1 mg. Singoserp and 25 mg. Esidrix; Singoserp®-Esidrix® **Tablets** #1 (white), each containing 0.5 mg. Singoserp and 25 mg. Esidrix. **Complete information sent on request.**
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CIBA
SUMMIT, NEW JERSEY

the drug. This combination of oleandomycin and glucosamine-potentiated tetracycline appeared to supply very favorable effectiveness.

R. H. SUNDBERG, M.D.
Antibiotic Med. & Clin. Ther. (1960)
Vol. 7, No. 2, P. 115

Otrivin as a Local Decongestant

The most widely used nasal decongestants frequently cause such reactions as habituation, rebound phenomenon, dizziness, and nausea. A decongestant less apt to be followed by these side-effects would be welcome, and Otrivin has been reported to be one of these agents. Ortrivin, a member of the aromatic imidazoline derivatives, is structurally altered to nullify certain untoward reactions. The authors administered Otrivin to 100 unselected clinic patients suffering with allergic or vasomotor rhinitis, sinusitis, upper respiratory-tract infections, otitis media, coryza, and tympanitis. The average dosage was 2-3 drops in each nostril 3-4 times daily. Overall effects of treatment were uniformly good. In 54 patients, results were excellent, in 26 they were good, and in ten they were fair. Side-effects were minimal, and did not require withdrawal of therapy. The results were considered impressive; Otrivin seems to meet all requirements of a good local decongestant. There was little or no toxicity, rebound, burning, headache or effect on blood pressure or urine. Otrivin appears to be a good local vasoconstrictor for the relief of nasal congestion; its action is rapid; it has shown no tendency to habituation, and the rebound phenomenon is minimal. It was used effectively in tapering off from other decongestants. It was noted that fewer myringotomies were performed while patients were using Otrivin, but no conclusion is suggested. Apparently, also, complications attending coryza are materially diminished.

W. J. HAGEN, M.D. and M. G. TRELLES, M.D.
Eye, Ear, Nose and Throat Monthly (1960)
Vol. 39, No. 1, P. 56



"Believe me, you don't want an appointment today . . "

Nontuberculous Bronchopulmonary Infections

The authors point out that the problems involved in the chemotherapy of infectious illnesses are defeating the resistance of existing pathogenic microorganisms and retarding the appearance of new resistant strains. A combination of drugs greatly retards the appearance of bacilli resistant to a single agent. In patients with chronic nontuberculous pulmonary infections, it is often difficult to ascertain which organisms are pathogenic and which represent normal bacterial flora. By suppression of certain pathogenic bacteria, organisms unaffected by the antibiotic are enabled to multiply. Due to frequent allergy to penicillin, the broad-spectrum antibiotics are preferable in pulmonary conditions, and oxytetracycline has been shown to be effective. Oleandomycin is known to be effective against pathogenic organisms in the respiratory tract. A combination of oxytetracycline and oleandomycin (Matroterra) was administered to a group of 80 patients with symptoms of nontuberculous bronchopulmonary infections, the cases being divided into appropriate classes. *Acute Infec-*

Continued on page 186a

taken at bedtime

BONADOXIN®

STOPS MORNING SICKNESS IN 94%

OFTEN WITH JUST ONE TABLET DAILY

by treating the symptom—nausea and vomiting—as well as a possible specific cause—pyridoxine deficiency



each tiny Bonadoxin tablet contains:
Meclizine HCl (25 mg.) for antinauseant action
Pyridoxine HCl (50 mg.) for metabolic replacement.

usual dose: One tablet at bedtime; severe cases may require another tablet on arising.

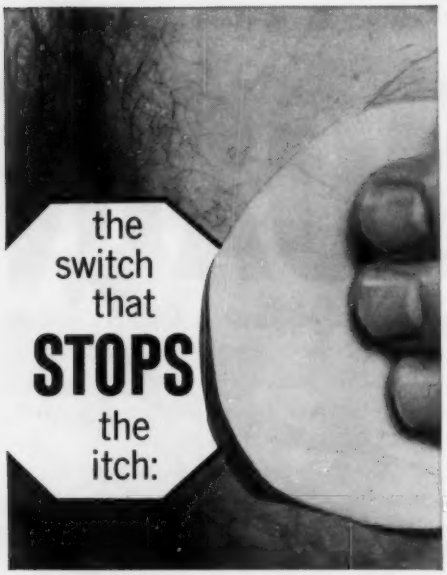
supply: Bottles of 25 and 100 tablets. Bonadoxin also effectively relieves nausea and vomiting associated with: anesthesia, radiation sickness, Meniere's syndrome, labyrinthitis, and motion sickness. Also useful in postoperative nausea and vomiting.

Bibliography on request.

For infant colic, try Bonadoxin Drops. Each cc. contains: Meclizine 8.33 mg./ Pyridoxine 16.67 mg.

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TUCKS®

–soft, cotton flannel pads saturated with witch hazel (50%) and glycerin (10%), pH 4.6

Routine use of moist, antipruritic TUCKS after defecation improves many intractable cases of pruritus ani and is a valuable adjunct to specific therapy. In milder cases, regular cleansing with TUCKS is often curative.

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tious Tracheobronchitis. Thirty-two patients averaged a dosage of 6.8 Gm. during a five-and-one-half-day period. In 15 patients, excellent results followed with complete disappearance of clinical symptoms. Sixteen patients responded satisfactorily. *Chronic Infectious Tracheobronchitis.* Twenty-three patients averaged the same total dosage over a period of seven days. In 12, results were excellent; in eight they were good, and three patients were greatly improved. *Bronchial Asthma and Chronic Bronchitis.* Eleven patients received a total of 16.5 Gm. of Matroterra during a sixteen-day period. Complete suppression of the infection occurred in six patients; results were good in three, and less satisfactory in two individuals. *Pulmonary Abscess.* Eight patients received a total dosage of 23.8 Gm. in 20 days. Excellent results followed in three, good results in four; in one patient treatment was started too late, and cure subsequently followed pleuropneumonectomy. *Bronchiectasis.* Six patients averaged 31 Gm. in 21 days. Results were excellent in one; good in two; fair in one. The remaining two patients failed to complete treatment.

CARLOS BENITEZ RODRIGUEZ and
ALBERTO SOLIZ

Antibiotic Med. and Clin. Ther. Vo. 7, No. 4, P. 156

Dexbrompheniramine Evaluated

The role of histamine in producing allergic reactions is not fully understood. However, histamine antagonists have become accepted medication for prevention and treatment of certain manifestations of sensitivity. A major deterrent to the use of these compounds is untoward side-effects, therefore the search for more efficient substances continues. In the treatment of respiratory and dermatologic aspects of allergy, halogenated pheniramine compounds have been found to be potent and well tolerated. Brompheniramine has achieved wide clinical usage in allergic disease amenable to

Continued on page 190a



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control

virtually all runaway diarrheas.. promptly, effectively with

Donnagel®

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–*your choice of* 3 formulations

Prompt, more dependable control of virtually all diarrheas can be achieved with an appropriate DONNAGEL formula, through adsorbent, demulcent, antispasmodic and sedative effects—plus paregoric or antibiotic supplementation, as required. Early re-establishment of normal bowel function is assured—for all ages, in all seasons.

DONNAGEL: In each 30 cc. (1 fl. oz.):

Kaolin (90 gr.)	6.0 Gm.
Pectin (2 gr.)	142.8 mg.
Hyoscyamine sulfate	0.1037 mg.
Atropine sulfate	0.0194 mg.
Hyoscine hydrobromide	0.0065 mg.
Phenobarbital (¼ gr.)	16.2 mg.

DONNAGEL–PG
Basic formula, plus
Powdered opium, U.S.P. .... 24.0 mg.
(Equivalent to paregoric, 6 ml.)

DONNAGEL WITH NEOMYCIN
Basic formula, plus
Neomycin sulfate ..... 300 mg.
(Equal to neomycin base, 210 mg.)

A. H. ROBINS CO., INC., Richmond 20, Virginia · *Ethical Pharmaceuticals of Merit since 1878*

INCREASED LIFE EXPECTANCY FOR HYPERTENSIVES

"Life expectancy seems to be the one criterion that is most reliable and least questioned as a method of evaluating treatment for patients with elevated blood pressure."[1] "It is evident that effective therapy of hypertension will prolong the life of the patient by preventing the dreaded complications of this disease in the brain, the heart and the kidneys." "There is no doubt of the prolongation of life in group 3 and 4 (Keith-Wagener-Barker) by adequate antihypertensive treatment. Some authorities report a 50 per cent, five year survival ratio for treated patients with malignant hypertension as against a 1 per cent survival ratio for untreated patients."[2]

Evaluation based on life expectancy is extremely difficult because of the peril of maintaining an untreated control group.[1] The doctor, however, can evaluate the symptoms related to the elevated blood pressure. . . . We know that retinopathy may improve, the heart may be reduced in size, the electrocardiogram may improve and in favorable cases the blood urea nitrogen level may fall.[2] These are reasonably objective criteria on which to base one's evaluation of treatment.[1]

On the succeeding page is evidence that Unitensen included in any therapeutic regimen may improve the results in hypertension as measured by a regression of objective clinical changes in a substantial proportion of the patients treated.

1. Currens, J. H.: New England J. Med. *261*:1062, 1959.
Waldman, S., and Pelner, L.: Am. Pract. & Digest. Treat. *10*:1139, 1959.
3. Cohen, B. M.: paper presented at A.M.A. Convention, June, 1958.
4. Cohen, B. M.: paper presented at Indiana Acad. G. P., March, 1959.
5. Cohen, B. M.: Am. J. Cardiology *1*:748, 1958.
6. Kirkendall, W. J.: J. Iowa M. Soc. *47*:300, 1957.
7. Cherny, W. B., *et al.*: Obst. & Gynec. *9*:515, 1957.
8. Raber, P. A.: Illinois M. J. *108*:171, 1955.
9. McCall, M. L., *et al.*: Obst. & Gynec. *6*:297, 1955.
10. Finnerty, F. A.: Am. J. Med. *17*:829, 1954.

Unlike diuretics or ganglionic blocking agents, Unitensen lowers blood pressure through widespread vasorelaxation. Normal vasomotor responses are not altered, and there is no venous pooling with resulting postural hypotension.[3-5] Through alleviation of cerebral vasospasm, Unitensen promotes cerebral blood flow and oxygen utilization.[6-9] Furthermore, Unitensen increases cardiac efficiency, improves renal function and tends to arrest the progress of vascular damage.[3, 4, 10]

Progress of Objective and Subjective Symptoms in Grades III and IV Hypertension Following Treatment with Unitensen and Unitensen-R

Observations in Patients* Treated up to 2 Years — **Observations in Patients* Treated up to 3½ Years**

The Course of Subjective Symptoms

Symptom	Number**	Improved	% Improved	Number**	Improved	% Improved
Headache	27	21	77.7	43	38	88.0
Palpitation	20	13	65.0	29	19	65.5
Angina	15	9	60.0	21	16	76.0
Dyspnea	17	8	47.0	27	14	51.0

Objective Changes Following Treatment

Finding	Number**	Improved	% Improved	Number**	Improved	% Improved
Funduscopic Changes	41	24	58.5	59	38	66.0
Enlarged Heart	20	13	65.0	35	23	65.7
Abnormal ECG	37	10	27.0	45	25	55.5
Proteinuria	31	12	38.7	43	27	62.7
Nitrogen Retention	17	6	35.2	28	10	35.7

Left hand charts from Clinical Exhibit "The Ambulatory Patient with Hypertension" presented AMA Convention, San Francisco, June 22-27, 1958, by B. M. Cohen, M.D.

*All patients in this study were initially classified as Smithwick Grades III and IV.

**Expressed as the number of patients exhibiting the symptom recorded.

Right hand charts include patients previously reported who had been continuously maintained on Unitensen and Unitensen-R, plus additional patients later added to the study. From Clinical Exhibit "The Office Diagnosis and Treatment of the Patient with Hypertension" presented American Academy of General Practice, Indianapolis, March 18-19, 1959, by B. M. Cohen, M.D.

UNITENSEN®

Each tablet contains: Cryptenamine (tannates) 2.0 mg.

UNITENSEN-PHEN®

Each tablet contains: Cryptenamine (tannates) 1.0 mg., Phenobarbital 15 mg.

UNITENSEN-R®

Each tablet contains: Cryptenamine (tannates) 1.0 mg., Reserpine 0.1 mg.

UNITENSEN® AQUEOUS

Each cc. contains: 2.0 mg. cryptenamine (acetates) in isotonic saline

new from Neisler
Analexin®
a new class of drug
for the relief of pain and muscle tension

Neisler **IRWIN, NEISLER & CO.**
Decatur, Illinois

oral antihistamines, and the dextrorotatory form is especially potent. Dexbrompheniramine (Disomer) was appraised in a series of 83 children whose disorders included allergic rhinitis with edema of mucous membrane and engorgement of the turbinates, mouth breathing, postnasal drip, contact dermatitis, urticaria, and erythema multiform. Disomer was administered as a syrup containing 2 mg. in 5 cc. or in 2-mg. tablets, the dosage schedule being 2 mg. four times daily. In the presence of atopic eruptions, topical hydrocortisone was given simultaneously: the combination gave good results. In the entire series, 29 patients responded with excellent results, 53 with good results and one with a fair result. During the study, it was frequently observed that the side-effects were exceptionally low at dosage levels adequate for treatment. Sedation, a common complaint with antihistamine therapy, was minimal, and did not cause discontinuance of the medication.

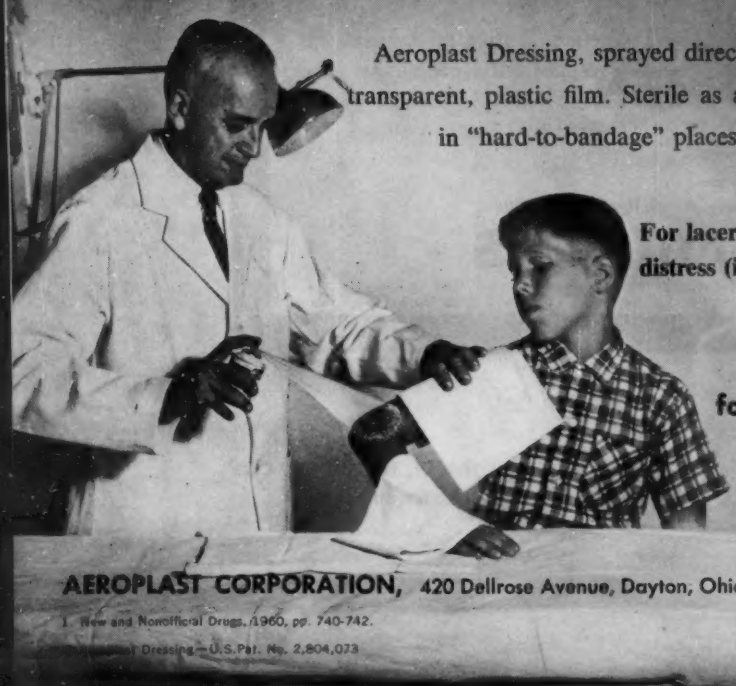
M. and S. OLANSKY, M.D.
Annals of Allergy (1960) Vo. 18, No. 4, P. 415

Parabromdylamine Maleate Evaluated

The practice of otolaryngology frequently includes treating some form of allergy. Both manifestation as to site of appearance and cause may be multiple. Among new synthetic antihistaminics to appear during a three-year period for the treatment of allergies is parabromdylamine maleate (Dimetane). It has been made available in 4-mg. tablets: as an elixir containing 2 mg. per teaspoon; as Extentabs containing 12 mg., and as two injectable

Continued on page 192a

spray on the bandage
with AEROPLAST® plastic spray-on dressing
brand of vibesate

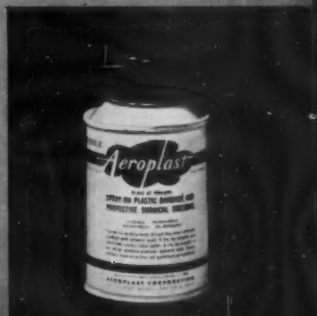


Aeroplast Dressing, sprayed directly on the lesion, forms a flexible bandage of transparent, plastic film. Sterile as applied . . . excludes bacteria . . . especially useful in "hard-to-bandage" places . . . waterproof . . . healing is not retarded.

For lacerations, abrasions, scalp wounds, superficial skin distress (insect bites, sunburn, chafing, etc.)

Convenient 3 oz. size for your treatment table

Available at your prescription pharmacy or surgical supply dealer. Also 6 oz. and 12 oz.



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1. New and Nonofficial Drugs, 1960, pp. 740-742.
Dressing—U.S.Pat. No. 2,804,073

1 with a single capsule daily

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high and level

Hematocrit reading quickly returns to, and remains normal in, common anemias with PRONEMIA. Provides ferrous fumarate, an improved iron, well tolerated, highly efficient, readily absorbed. Easily maintained, one-capsule daily regimen. All known blood-building factors, including vitamin B_{12} enhanced by AUTRINIC® Intrinsic Factor Concentrate.

Each PRONEMIA capsule contains:

Vitamin B_{12} with AUTRINIC® Intrinsic Factor Concentrate	2 U.S.P. Oral Units
Ferrous Fumarate (Elemental iron, 115 mg.)	350 mg.
Ascorbic Acid (C)	150 mg.
Folic Acid	2 mg.

Available on your prescription only.

PRONEMIA®

Hematinic Lederle

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

forms containing 10 and 100 mg. per cc. One hundred ninety-eight patients with diagnoses of allergic rhinitis, antibiotic reactions, eczematoid reactions of face, ears and conjunctivae, allergic rhinitis associated with black hairy tongue, allergic bronchitis with rhinitis, and insect bites were treated with Dimetane using Extentabs almost exclusively for adults and the elixir for children. One hundred seventy-four patients responded satisfactorily, while 18 were moderately relieved. The parenteral form is very effective when immediate response is indicated as in the case of insect stings, and also for the patient with black hairy tongue who cannot use an oral form of medication. Decided improvement to complete relief was obtained within one hour or less with the injectable form. Patients with more than one allergic manifestation showed a higher response to parabromdylamine maleate than those with a single condition.

MERRILL LINEBACK, M. D.

Eye, Ear, Nose & Throat Monthly (1960)
Vol. 39, No. 4, P. 342

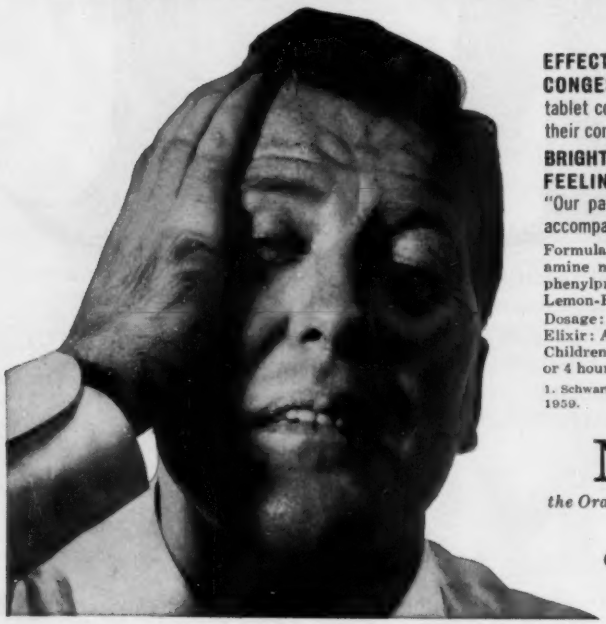
Acute Myocardial Infarction Treated with Levarterenol

Hypotension occurs in about ten percent of patients with acute myocardial infarction, and is probably due to the inability of the left heart to maintain an adequate output as well as failure of peripheral response. In the absence of signs of shock if the systolic blood pressure remains under 80 to 85 mm. Hg, or under 90 to 95 mm. Hg in a known hypertensive, for one to three hours in spite of relief of pain and administration of oxygen, levarterenol should

Continued on page 194a

FOR THE

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EFFECTS EXTEND TO DEEP-SEATED NASAL CONGESTION "Many (patients) were surprised that a tablet could result in such pronounced improvement of their congested nasal passages."[1]

BRIGHTENS MOOD — PRODUCES A PLEASANT FEELING OF "CLEARED HEAD AND MIND" "Our patients reported a feeling of well-being which accompanied the increased ability to breathe freely."[1]

Formula: Timed-Release Tablets: chlorprophenpyridamine maleate 4 mg., phenindamine tartrate 24 mg., phenylpropanolamine hydrochloride 50 mg. Delicious Lemon-Flavored Elixir: One-quarter strength

Dosage: Tablets: Adult Dose: One tablet every 8 hours Elixir: Adult Dose: Two teaspoonfuls every 3 or 4 hours. Children: Six years and over, one teaspoonful every 3 or 4 hours. Under six years according to age and weight.

1. Schwartz, T. A., and Slasman, W. H.: E.E.N.T. Monthly *38*:645, 1959.

NOLAMINE

the Oral Nasal Decongestant that normalizes the mood

CARNRICK • Newark 4, New Jersey

ANTACID THERAPY

for bedridden as well as ambulant patients

Pleasant Tasting

Titralac®

milk-like action...

no constipation or laxation...

no interference with gastrointestinal absorption...

WHENEVER an ANTACID is indicated:

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- Heartburn due to dietary or alcoholic indiscretions, pregnancy
- Gastric hyperacidity associated with acute, subacute, and chronic gastritis
- Drug-induced gastric hyperacidity resulting from administration of salicylates, corticosteroids, reserpine, etc.



for on-the-go convenience

Titralac® TABLETS

Prompt prolonged action anywhere, anytime. Smooth, deliciously flavored tablets may be chewed, dissolved in mouth, or swallowed with water.

Availability: White, mint-flavored tablets, each containing glycine 0.18 Gm. and calcium carbonate 0.42 Gm. In bottles of 100.

for relief in a teaspoonful

Titralac® LIQUID

Just one teaspoonful—not ounces or tablespoonfuls. Fresh minty flavor appeals to the most finicky palate.

Availability: White, mint-flavored liquid, each teaspoonful (5 cc.) containing glycine 0.30 Gm. and calcium carbonate 0.70 Gm. In bottles of 8 fl. oz.

when spasm is a predominant factor

Titralac-SP®

Titralac plus homatropine methylbromide, for acute phases or when spasm contributes to symptom picture. Same delicious taste as Titralac tablets and liquid.

Availability: Pink, mint-flavored tablets, each containing Titralac formula plus 0.5 mg. homatropine methylbromide, bottles of 100.

Riker

Northridge, California

be given. Moreover, if signs of shock are present, levarterenol should be given at once. When definite congestive failure is present, digitalis is required in addition to the levarterenol therapy. The systolic pressure should be maintained at 100 mm. Hg (120 mm. Hg in hypertensives). If this response does not occur, the concentration of levaterenol should be increased, but the infusion should not be given at a rate of more than 60 drops per minute. There are no contraindications to the use of levarterenol except inadequate supervision, and nurses should be carefully instructed. Complications are minimal. Interstitial escape of levarterenol should be detected at once, and measures taken to prevent necrosis and pain. If administration is to be continued for several days, a venous cut-down should be performed and a polyethylene tube inserted. A femoral vein cut-down may be life-saving when peripheral veins are unobtainable. The dosage of levarterenol should be reduced gradually as the blood pressure improves.



"Woman driver!"

Intravenous infusion of dextrose solution should be used for a day after the levarterenol has been discontinued.

E. MAURICE HELLER, M.D.

Canad. Med. Assn. J. (1960) Vol. 82, No. 18, P. 917

Triacetyloleandomycin Evaluated

While antibiotics represent a high order of efficacy in the treatment of infections, their indiscriminate use is not without a multiplicity of dangers. In the severe, fulminating infection, risking the hazards of antibiotic therapy is justified: in the more common minor infections careful consideration should be given to the possible untoward effects. Maximum therapeutic value with the least probable risk is the goal in treating minor though discomforting infections. Triacetyloleandomycin (Tao) has been shown to be clinically active against common gram-positive and some gram-negative pathogens including many of those resistant to older drugs. For the author's study, triacetyloleandomycin was available as an oral suspension of 125 mg. per teaspoonful, and as capsules containing the equivalent of 250 mg. of oleandomycin base; the latter were used more frequently. The dosage was 250 to 500 mg. three times daily for approximately five days. A total of 100 patients with gastroenteritis, cutaneous infections, and respiratory infections including pharyngitis and bronchitis were treated. The predominating organisms encountered were Staphylococcus aureus, albus and pyogenes; Streptobacillus moniliformis; Diplococcus pneumoniae; Neisseria catarrhalis, and Bacillus subtilis. Responses to triacetyloleandomycin were measured by improvement in appearance of lesions, hematograms, and systemic temperature graphs. Definite improvement was noted in the majority of cases at the end of the first or second day. Side-effects were conspicuously absent. The study demonstrated the definite efficacy of Tao.

C. H. CARTER, M. D.
Antibiotic Med. and Clin. Ther. (1960)
Vol. 7, No. 2, P. 125
Continued on page 196a



The physician listens to a tense, nervous patient discuss her emotional problems. To help her, he prescribes Meprospan® (400 mg.), the only continuous-release form of meprobamate.



The patient takes one Meprospan-400 capsule at breakfast. She has been suffering from recurring states of anxiety which have no organic etiology.



She stays calm while on Meprospan, even under the pressure of busy, crowded supermarket shopping. And she is not likely to experience any autonomic side reactions, sleepiness or other discomfort.



She takes another capsule of Meprospan-400 with her evening meal. She has enjoyed sustained tranquilization all day—and has had no between-dose letdowns. Now she can enjoy sustained tranquilization all through the night.

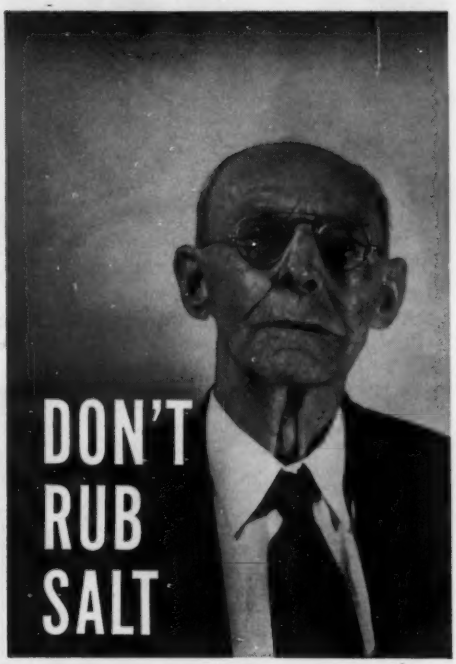


Relaxed, alert, attentive . . . she is able to listen carefully to P.T.A. proposals. For Meprospan does not affect either her mental or her physical efficiency.



Peacefully asleep . . . she rests, undisturbed by nervousness or tension. (Samples and literature on Meprospan available from Wallace Laboratories, Cranbury, N. J.)

CME-3063



IN HIS CARDIAC WOUND

Modern saluretics may *seem* to have made unlimited salt intake possible for cardiac and hypertensive patients. Yet despite the improvements in diuretic therapy, sodium restriction is still important in the prophylaxis of edema. The wise physician does not add needlessly to the burden of his patient, nor test unnecessarily the power of the drugs he prescribes. It makes good sense to him to prescribe DIASAL—which looks, tastes and flavors food exactly like salt . . . but is sodium free.

Diasal contains potassium chloride, glutamic acid and inert ingredients. Supplied in shakers and 8 oz. bottles.

prescribe DIASAL®
sodium-free salt substitute

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Sedative Intoxication Treatment

It has been stated that bemegride (Megimide) is a potent central nervous system stimulant and convulsant rather than a barbiturate antagonist, an opinion held formerly. The author reports on the use of Megimide for acute sedative intoxication in eight individuals. The maintenance of an adequate airway and usual methods of supportive treatment were used, followed by the passing of a large-bore stomach tube and the aspiration of the stomach contents. An intravenous drip of 1000 ml. of 5 percent dextrose in water was started to combat dehydration and to provide a convenient route for the administration of bemegride. The drug was given in 50 mg. (10 ml.) increments at intervals of three to five minutes until the patient reached the so-called "safe state," characterized by an elevation of blood pressure, an increase in the rate and depth of respiration, a return of reflexes, groaning, and slight voluntary movement. He was then transferred from the Emergency Department for further care and observation. Although the number of cases studied was small, certain points in connection with the use of Megimide are apparent. The drug was most effective in glutethimide poisoning, less markedly so in barbiturate poisoning, and ineffective against meprobamate, promazine derivatives, and the tertiary alcohols. Patients should be taken to the "safe state," with further ingestion of the drug the risk of toxicity is involved. Thiopental sodium should be available at all times for use if a toxic reaction occurs. Bemegride has definite value for treating intoxication caused by glutethimide and barbiturates, and offers several advantages: it obviates the need for prolonged endotracheal intubation; it minimizes the immediate danger to the patient's life as well as that associated with possible complications, and it shortens the need for strict nursing care.

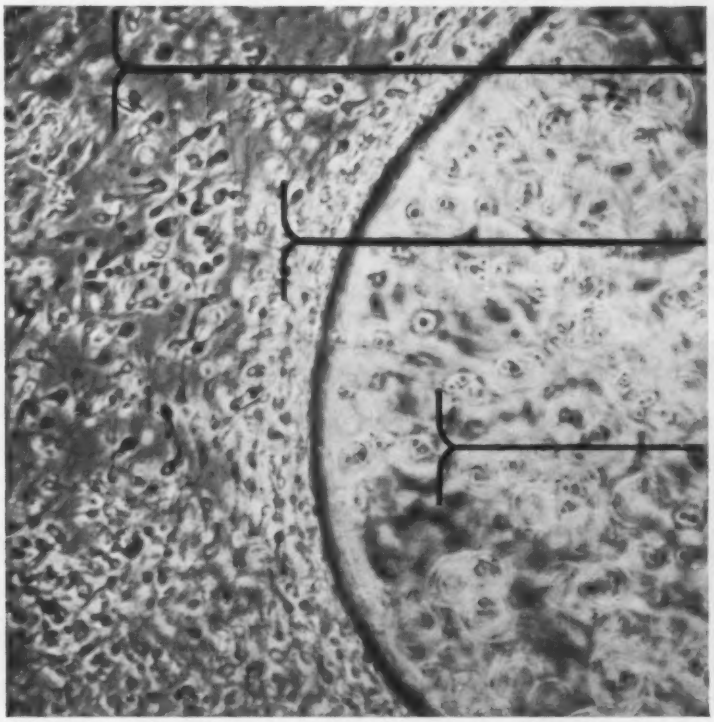
D. A. KAVELMAN, M.D.

Canad. Med. Assn. J. (1960) Vol. 82, No. 16, P. 825

Concluded on page 198a

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spermatozoa viable and highly motile before reaching interface of seminal fluid and IMMOLIN Matrix

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Simple, effective conception control — without an occlusive device[1,2]

1. Goldstein, L. Z.: Obst. & Gynec. 10:133 (Aug.) 1957.
2. Finkelstein, R., and Goldberg, R. B.: Am. J. Obst. & Gynec. 78:657 (Sept.) 1959.

Active ingredients: Methoxypolyoxyethyleneglycol 550 laurate 5%, Nonylphenoxypolyethoxyethanol 1%.

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JULIUS SCHMID, INC.
423 West 55th Street, New York 19, N. Y.

Erythromycin Propionate in the Treatment of Infections

An ester of erythromycin — erythromycin propionate (Ilosone) — has been shown to be an active antibiotic that is readily absorbed from the gastrointestinal tract. The authors report on the use of this drug for treating 246 patients with infectious disease. Routine examinations were carried out. The erythromycin propionate was standardized to contain 250 mg. of erythromycin base activity per capsule. During the early part of the study, a dosage schedule of one capsule every six hours was employed; this was later changed to two capsules every six hours unless gastrointestinal intolerance restricted the dosage to one capsule. *Eighty-five* patients with acute tonsillitis were treated for an average of five days. Results were good in 78 patients. It was decided that larger dosage did not hasten recovery, but did substantially increase the gastrointestinal side-effects. The incidence of recurrence, it was believed, would have been lessened with a longer period of antibiotic administration. Of *sixty* patients with various combinations of inflammatory reactions of the nasal passages, pharynx, larynx and bronchial tree, 55 had prompt clinical recovery without complications. *Twenty-one* instances of abscess, all with an area of induration of 2 cm. or larger were treated successfully with one exception. Side-effects of nausea, vomiting, abdominal cramps, and diarrhea, singly or in combination, ceased within 24 to 48 hours after discontinuing the drug. Apparently, untoward effects of the drug occurred during the first days of its administration. With the initial period passed, Ilosone could be tolerated for long periods.

G. A. CRONK, M.D. and D.E. NAUMAN, M.D.

Antibiotic Med. and Clin. Ther. (1960)

Vol. 7, No. 3, P. 182



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for smoother management of g. i. spasm

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TIME-MATCHED ANTISPASMODIC SEDATIVE COMBINATION

BUTIBEL combines two synchronous components—belladonna and BUTISOL.®

Unlike poorly matched belladonna-phenobarbital combinations, BUTIBEL neither builds up a sedative burden nor leaves the spasm unprotected.

Rather, BUTIBEL, with its time-matched components, gives full, uninterrupted antispasmodic *and* sedative action.

BUTIBEL: *belladonna extract...15 mg. and* BUTISOL Sodium®*...15 mg.* butabarbital sodium

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CHELATED—like the iron of hemoglobin ...clinically confirmed as an effective hematinic[1] ...with a **built-in molecular barrier** against g.i. intolerance and systemic toxicity.[1,2] Permits administration on empty stomach for greater iron uptake...safeguards children against the growing problem of accidental iron poisoning.[1,3]

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GOOD TASTING DOSAGE FORMS FOR EVERY AGE GROUP
ALL SAFE TO HAVE AROUND THE HOME

CHĒL-IRON Tablets: each tablet provides equiv. 40 mg. elemental iron.

CHĒL-IRON Pediatric Drops: equiv. 25 mg. elemental iron per cc. as delivered by accompanying calibrated dropper.

CHĒL-IRON Liquid: for children past the "drop-dose" stage, equiv. 50 mg. elemental iron per teaspoonful (5 cc.).

Also available: **CHĒL-IRON PLUS Tablets**—chelated iron plus B_{12}, folic acid, other B vitamins, and C.

1. Franklin, M., et al.: Chelate Iron Therapy, J.A.M.A. 166:1605, 1958
2. A.M.A. Council on Drugs: New and Nonofficial Drugs, J.A.M.A. 171:391, 1959.
3. A.M.A Committee on Toxicology: Accidental Iron Poisoning in Children J.A.M.A. 170:576, 1959.

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A Superb Gift

This imported decorator's piece makes an outstanding gift
or prize that surely will be treasured by its recipient.
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it will add a note of charm to a physician's office or home.

Styled and hand-painted by Italian artists,
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Quadrinal*

a rapid way to clear the airway

- **stops wheezing**
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In chronic disorders associated with obstructed respiration, the dependable antispasmodic and expectorant action of Quadrinal rapidly clears the bronchial tree. Patients breathe more easily and acute episodes of bronchospasm are often eliminated. Quadrinal is well tolerated, even on prolonged administration. The potassium iodide in Quadrinal provides an expectorant of time-tested effectiveness and safety.

Indications—Bronchial asthma, chronic bronchitis, pulmonary fibrosis, pulmonary emphysema.

Quadrinal Tablets, containing ephedrine HCl (24 mg.), phenobarbital (24 mg.), 'Phyllicin'* (theophylline-calcium salicylate) (130 mg.), **and potassium iodide** (0.3 Gm.).

Also available—
a new Quadrinal dosage form with taste-appeal for all age groups:
fruit-flavored QUADRINAL SUSPENSION (1 teaspoonful = 1/2 Quadrinal Tablet)

KNOLL PHARMACEUTICAL COMPANY, ORANGE, NEW JERSEY

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NEWS AND NOTES

Selected items of current interest from the fields of medical research and education

Stevan Dohanos, Medical Times Art Director, named 1960 National Honorary Christmas Seal Chairman

Stevan Dohanos, noted artist, magazine illustrator, teacher and recovered TB patient, will serve as 1960 National Honorary Christmas Seal Chairman, it was announced recently by Herbert C. DeYoung, president of the National Tuberculosis Association.

The announcement came at a luncheon given in the artist's honor by the Society of Illustrators at the Society's headquarters, 128 East 63rd Street, New York City. About 125 notables from the fields of art, public health, advertising, journalism, industry and education were present. Tram Mawicke, Society of Illustrators president, presided.

Speakers included luncheon chairman Howard Munce, vice president and executive art director, Foote, Cone and Belding; Albert Dorne, distinguished artist and president, Famous Artists Schools; Mr. DeYoung and Mr. Mawicke.

In announcing Mr. Dohanos' selection as 1960 National Honorary Chairman, Mr. DeYoung said:

"The Board of the National Tuberculosis Association had ample reason for asking Stevan Dohanos to spearhead this year's Christmas Seal Campaign. No one knows better than he what effect TB has on one's life. He has had it twice himself. He was stricken with it first in 1932, then suffered a relapse in 1941. A brother, Bert, and a sister, Irene, died of it. His wife's brother, Valentine, also lost his life to it. Still another of Mrs. Dohanos' brothers, Andrew, was stricken but happily recovered.



STEVAN DOHANOS

"TB brought tragedy to his life. But it also brought inspiration to fight disease with the strongest weapon at his command, his art. For many years, he has given his time and talents to support the work of TB associations and other voluntary health agencies and charities. He has done this without fanfare. As far as I know, this is the first time he has received any national recognition for his efforts. We are proud to be the organization to give it to him."

As National Honorary Chairman, Mr. Dohanos will appear on TV and radio, relate his personal experience with TB through news-

Continued on page 204a

THE "PHYSICIAN'S METHOD" COMPLETE....FOR CONTRACEPTION

The more satisfied patient will be motivated to follow your instructions for regular use. Recommend the KOROMEX COMPACT to your patients . . . make it possible for them to determine whether Jelly or Cream is best suited to their individual requirements.

EACH KOROMEX COMPACT
contains:
Koromex Jelly—regular size tube
Koromex Cream—trial size
Koromex Diaphragm—Coil Spring
Koromex Introducer



(Koromex cream and sanitary zippered plastic clutch bag supplied at no extra charge) Always insist on the use of time-tested Koromex Jelly or Cream with a diaphragm.

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paper and magazine stories, and work closely with state and local chairmen.

Stevan Dohanos was born at Lorain, Ohio, May 18th, 1907, the son of Hungarian immigrants. He attended art schools in Ohio before going to New York where he joined the Charles E. Cooper Art Studios as an artist-illustrator. In 1942, he entered the free lance art field. He has since painted about 125 covers for The Saturday Evening Post and his work has appeared in many other national publications as article and advertising illustrations.

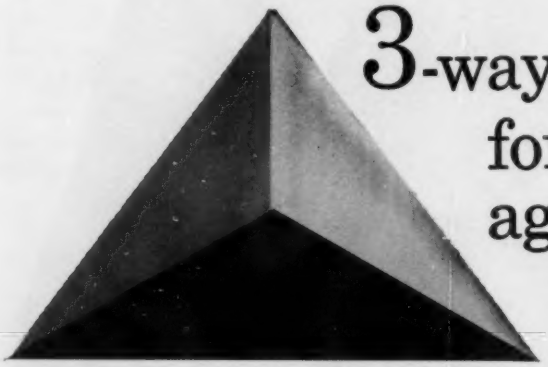
He is a member of the Founding Faculty of Famous Artists School of Westport, Connecticut and art director of Medical Times magazine. He is also an illustrator for Readers Digest Condensed books.

Among his contributions to the National Tuberculosis Association was the design for the 1941 Christmas Seal. He has also designed three U. S. Postage Stamps. This summer, he travelled around the world making sketches to be used in a new series of paintings.

Evaluation of New Drugs

With the appointment of a new director, and the promise of several grants, investigation carried on by the Section of Clinical Pharmacology, Department of Cardiology of the Philadelphia General Hospital has received a marked impetus. Work will center around the study and evaluation of new drugs, as they appear, that are for use in cardiovascular disease, with emphasis placed on studying the mechanisms of enzymatic drugs which affect the rate of heartbeat. It is hoped that this program, devoted to testing the new drugs which appear annually, will be continuous.

Continued on page 206a



3-way support for the aging patient...

ASSISTS PROTEIN UPTAKE
IMPROVES MENTAL OUTLOOK
AIDS NUTRITIONAL INTAKE

NEW 1 small capsule every morning

GEVRESTIN®

Geriatric Vitamins-Minerals-Hormones-d-Amphetamine Lederle

Each capsule contains: Ethinyl Estradiol 0.01 mg. • Methyl Testosterone 2.5 mg. • d-Amphetamine Sulfate 2.5 mg. • Vitamin A (Acetate) 5,000 U.S.P. Units • Vitamin D 500 U.S.P. Units • Vitamin B_{12} with AUTRINIC® Intrinsic Factor Concentrate 1/15 U.S.P. Unit (Oral) • Thiamine Mononitrate (B_1) 5 mg. • Riboflavin (B_2) 5 mg. • Niacinamide 15 mg. • Pyridoxine HCl (B_6) 0.5 mg. • Calcium Pantothenate 5 mg. • Choline Bitartrate 25 mg. • Inositol 25 mg. • Ascorbic Acid (C) as Calcium Ascorbate 50 mg. • l-Lysine Monohydrochloride 25 mg. • Vitamin E (Tocopherol Acid Succinate) 10 Int. Units • Rutin 12.5 mg. • Ferrous Fumarate (Elemental Iron, 10 mg.) 30.4 mg. • Iodine (as KI) 0.1 mg. • Calcium (as $CaHPO_4$) 35 mg. • Phosphorus (as $CaHPO_4$) 27 mg. • Fluorine (as CaF_2) 0.1 mg. • Copper (as CuO) 1 mg. • Potassium (as K_2SO_4) 5 mg. • Manganese (as MnO_2) 1 mg. • Zinc (as ZnO) 0.5 mg. • Magnesium (MgO) 1 mg. • Boron (as $Na_2B_4O_7 \cdot 10H_2O$) 0.1 mg. Bottles of 100, 1000.

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York

New medical survey shows what doctors consider most important in a laxative they would use or recommend:



To find out the qualities doctors consider most important in a laxative they would use or recommend, an independent research organization asked doctors across the country for their professional opinions. The survey findings show that doctors want a laxative that is (1) Gentle, (2) Effective and (3) Close to Natural Acting.

These are the qualities that have made pleasant-tasting Ex-Lax so widely used and recommended over the years—the same qualities that make Ex-Lax so well suited for 1960's professional needs.



Postgraduate Course in Allergy

A continuous course of two weeks' duration is being offered by the Departments of Allergy and Applied Immunology of the Temple University Medical Center and the Graduate School of Medicine of the University of Pennsylvania. Sessions will be held daily at the Temple University Medical Center, 9:00 A.M. to 5:00 P.M., February 27 to March 10, 1961. Tuition Fee—$175. Enrollment limited. Dr. Louis Tuft is course director with Drs. George Blumstein and Merle M. Miller as associate directors.

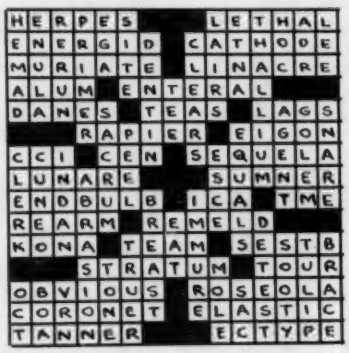
An outstanding faculty has been assembled to review the basic principles of immunology and allergy as applied to clinical practice. Emphasis will be given to the methods of diagnosis and management of the allergic patient.

The course is designed for physicians desirous of extending their knowledge of allergy. It could serve as an introductory course for those about to enter the field or as a review course for practicing allergists.

For brochure and application forms write to: Dr. George Blumstein, c/o: Temple Medical Center, Philadelphia 40, Pa.

MEDICAL TEASERS

Answer to puzzle on page 47a



Growth Hormone to be Supplied by Pituitary Bank

Establishment of the world's first Pituitary Bank was announced recently at the University of California Medical Center, San Francisco. The new Bank is being aided by a grant from the Jefferson McLeod More Fund of the School of Medicine. Clinical studies have been supported by the Lasker Foundation, the American Cancer Society, and the McKee Fund of the School of Medicine.

The chief purpose of the Bank is to help assure an increasing supply of human pituitary glands for the treatment of children stunted by a deficiency of growth hormone. It has been found, during the past two years, that injections of human growth hormone help significantly in increasing stature in children who are abnormally short. The human gland is at present the only source of a reliable hormone for this purpose. A single pituitary supplies only enough of the hormone for one day's treatment of a patient.

Growth hormone, even if it were widely available, would not be an appropriate treatment for all short children. In some instances growth is retarded by inadequate thyroid function and can be accelerated with thyroid extract. Growth can be stimulated in some boys with male sex hormones. Many families worry unnecessarily about children who simply are at the lower end of the normal height range. However, a small yet significant number of children are prevented from reaching normal stature by failure of their pituitaries to produce enough growth hormone. Many pituitary dwarfs have other abnormalities of appearance or endocrine function; slow sexual development is particularly common. Some patients who mature as normally-formed midgets or near midgets lack only a sufficient amount of growth hormone.

It is hoped that a more plentiful source of clinically effective growth hormone will eventually be found. A cattle growth hormone has

Continued on page 208a

effectively checking gout

retards the disease
by increasing
urate excretion

Anturane

brand of sulfinpyrazone

(formerly Anturan)

Geigy



161-60

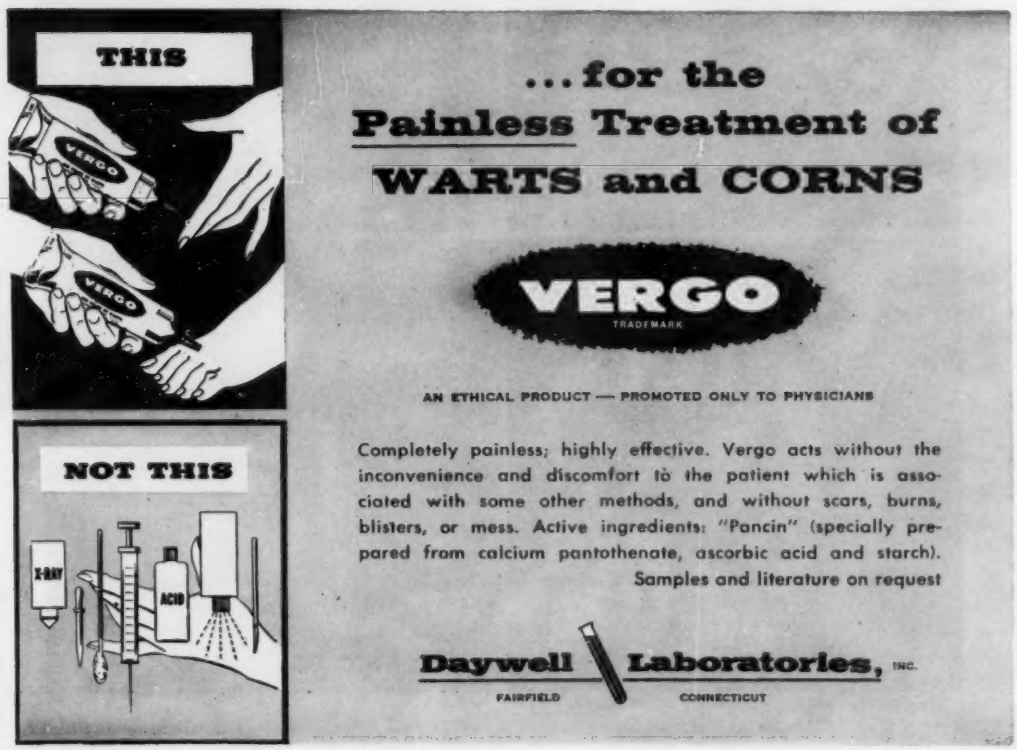
shown some initial promise. However, this and other animal pituitary hormones have not so far proved reliable stimulators of growth in humans. Successful use of a growth hormone in patients is one of the fruits of some forty years of research on the pituitary gland—the so-called "master gland" of the endocrine system. The existence of a growth hormone was first demonstrated in 1921. In recent years, the isolation of five of the anterior pituitary hormones has been achieved.

Biochemical studies on the patients treated with human growth hormone have been performed in the Metabolic Unit at the University of California Medical Center. During early phases of treatment these studies established that the hormone caused metabolic changes necessary for the onset of growth. Included in the studies were the effects of growth hormones on cells in tissue culture. The findings suggest that the hormone acts directly on individual cells rather than on some intermediate target organ. Investigators in the Department of Pathology have also identified the hormone-secreting cells of the pituitary under the electron microscope.

Peptic Ulcer Studies

The World Organization of Gastroenterology has undertaken a world-wide survey of the differences in incidence and behavior of peptic ulcer. This subject was chosen, according to Dr. Henry L. Bockus, because of striking differences in behavior patterns of this disease from country to country, and also within a single country. Many of these epidemiologic,

Continued on page 210a



CLINICAL REMISSION IN A "PROBLEM" ARTHRITIC

In rheumatoid arthritis with serious corticoid side effects. Following profound weight loss and acute g.i. distress on prednisolone, a 45-year-old bookkeeper with a five-year history of severe arthritis was started on DECADRON, 1 mg./day. Dosage was promptly reduced to 0.5 mg./day. After ten months on DECADRON, she gained back eleven pounds, feels very well, and had no recurrence of stomach symptoms. She is in clinical remission.*

New convenient b.i.d. alternate dosage schedule: the degree and extent of relief provided by DECADRON allows for b.i.d. maintenance dosage in many patients with so-called "chronic" conditions. Acute manifestations should first be brought under control with a t.i.d. or q.i.d. schedule.

Supplied: As 0.75 mg. and 0.5 mg. scored, pentagon-shaped tablets in bottles of 100. Also available as injection DECADRON Phosphate. Additional information on DECADRON is available to physicians on request. DECADRON is a trademark of Merck & Co., Inc.

*From a clinical investigator's report to Merck Sharp & Dohme.

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TREATS MORE PATIENTS MORE EFFECTIVELY

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anorectic-ataractic
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meprobamate 400 mg., with d-amphetamine sulfate 5 mg., Tablets

FOR THERAPY
OF OVERWEIGHT PATIENTS

- d-amphetamine depresses appetite and elevates mood
- meprobamate eases tensions of dieting (yet without overstimulation, insomnia or barbiturate hangover).

Dosage: One tablet one-half to one hour before each meal.

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IN
APPETITE CONTROL

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CUTTER
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HYPAROTIN™
mumps immune globulin
derived from adult venous blood

Provides prophylaxis against mumps and its complications. Massive dosage may prevent orchitis if given as soon as possible after onset of mumps symptoms.
Available in 1½ cc. and 4½ cc. vials.

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Modifies or prevents measles.
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CUTTER LABORATORIES, Berkeley, California

or environmental, variants have been noted before, but reasons for such differences have never been explained satisfactorily.

It has been noted that duodenal ulcer is very common in the southern part of India where rice and condiments are freely ingested, and is found to a lesser extent in the far north in Kashmir where somewhat similar eating habits prevail, but the disease seems to be rare in the remainder of north India where wheat is often the staple food.

The ulcer as noted in south India is markedly different from that encountered in the United States in such respects as acid content of the stomach, incidence of perforation and hemorrhage, and incidence of obstruction at the pylorus. A comprehensive study of such variations in disease patterns, based on racial, climatic, geographic and habit factors, may lead to important additions to our knowledge.

Pigment Formation

A new concept of the formation of dark pigment in the skin has been offered by a research group from the Department of Dermatology of the Harvard Medical School and the Massachusetts General Hospital. Through morphological and biochemical studies, they have identified a distinctive, enzymatically active particle which they have termed a "melanosome," in which melanin is formed, apparently by transformation through the action of a specific enzyme. This new concept of pigment formation challenges current views which hold that melanin granules and the mitochrondria in pigment cells are alike. Electromicrographs of mitochrondria and melanin, the Harvard-Massachusetts General Hospital group found, pointed to the structural dissimilarity of the two. They have, therefore, proposed that melanin formation starts in the cell protoplasm near the nucleus as tyrosine, and that in the succeeding step "melanosome" is formed. The pigmented granule results from the gradual

Continued on page 218a



if you're treating a coccal infection...

you can't prescribe a more effective antibiotic than ERYTHROCIN

Erythromycin, Abbott

How much "spectrum" do you need in treating an infection? Clearly, you want an antibiotic that will show the greatest activity against the offending organism, *and the least activity against non-pathogenic gastro-intestinal flora.*

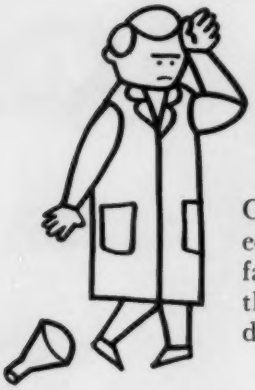
Weigh these criteria—and make this comparison—when treating your next coccal infection. Erythrocin is a medium-spectrum antibiotic, notably effective against gram-positive organisms. In this it comes close to being a "specific" for coccal infections—*which means it is delivering a high degree of activity against the majority of common infection-producing bacteria.*

And against many of the troublesome "staph" strains—a group which shows increasing resistance to penicillin and certain other antibiotics—Erythrocin continues to provide bactericidal activity. Yet, as potent as Erythrocin is, *it rarely has a disturbing effect on normal gastro-intestinal flora.* Comes in easy-to-swallow Filmtabs®, 100 and 250 mg. Usual adult dose is 250 mg. every six hours. Children, in proportion to age and weight. Won't you try Erythrocin?

®Filmtab—Film-sealed tablets, Abbott.

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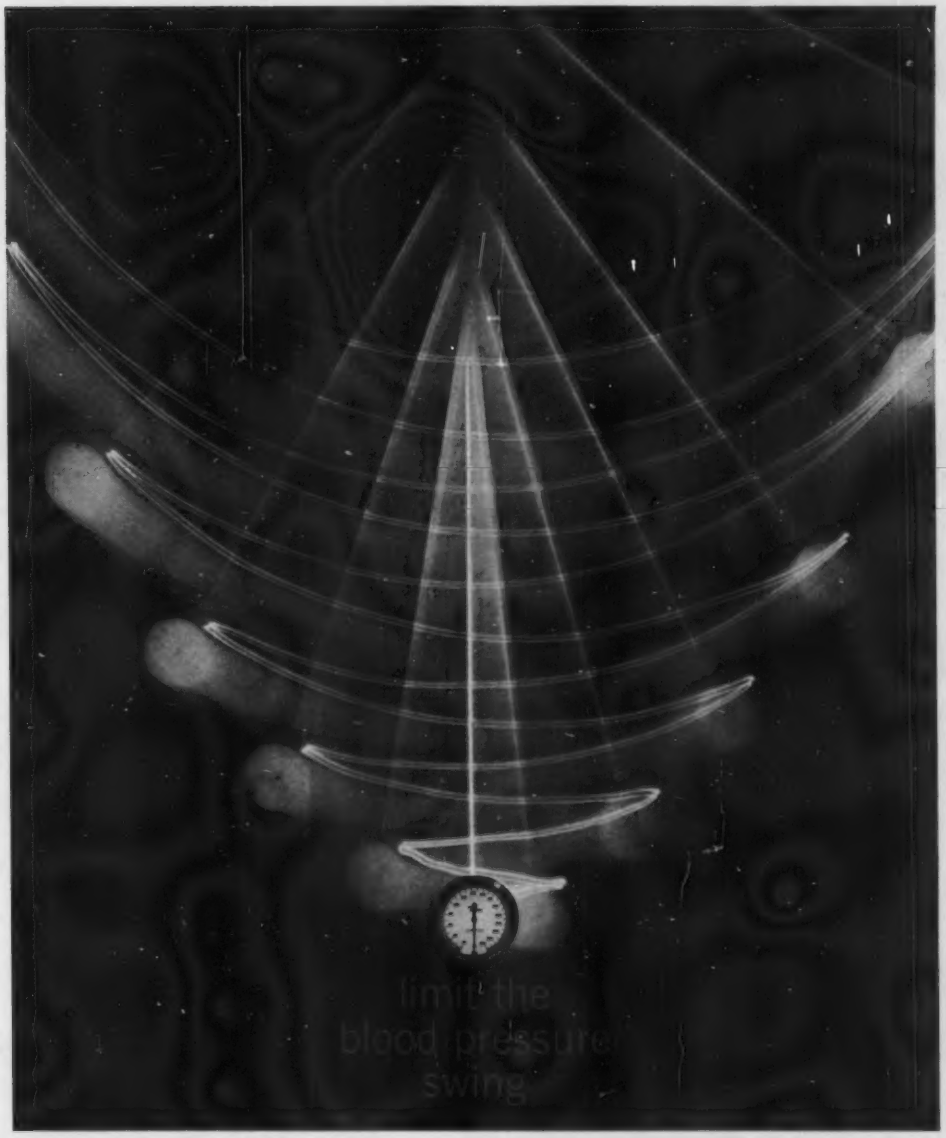


One pharmaceutical research executive points up the importance of failures as guideposts to success in the search for new or improved drugs when he says:

"Failure is our most important product."

The pharmaceutical industry's investment in research has been growing much faster than the industry itself. Last year the prescription drug companies spent a record $197 million for research, a five-fold increase in the space of ten years. Such an investment is possible, of course, only when there are profits. • This growth in privately financed research has sent the volume of laboratory failures soaring. For two years in a row the pharmaceutical industry has tested more than 100,000 substances in the search for new medicines. Fewer than two per cent showed enough promise for clinical testing. Only a handful will ever be sold as prescription drugs. The odds against finding a product with therapeutic value probably exceeded 2000-to-1. • But year by year, as the failures mount, the successes also increase, putting new or improved medications at the disposal of the medical profession. And the public benefits through better health, specific cures, shorter hospitalization, longer lives. • This is only one part of the massive assault on disease that engages the health team headed by the medical profession and embracing hospitals, nurses, pharmacists, technicians, and colleges. It is an effort that could only take place in a society which encourages individual freedom and guarantees incentives to freedom of enterprise.

This message is brought to you in behalf of the producers of prescription drugs. For additional information, please write Pharmaceutical Manufacturers Association, 1411 K Street, N.W., Washington 5, D. C.



Rautrax-N lowers high blood pressure gently, gradually . . . protects against sharp fluctuations in the normal pressure swing. Rautrax-N combines Raudixin, the cornerstone of antihypertensive therapy, with Naturetin, the new, safer diuretic-antihypertensive agent. The complementary action of the components permits a lower dose of each thus reducing the incidence of side effects. The result: Maximum effectiveness, minimal dosage, enhanced safety. Rautrax-N also contains potassium chloride — for added protection against possible potassium depletion during maintenance therapy.

Supply: Rautrax-N — capsule-shaped tablets — 50 mg. Raudixin, 4 mg. Naturetin, and 400 mg. potassium chloride. Rautrax-N Modified — capsule-shaped tablets — 50 mg. Raudixin, 2 mg. Naturetin, and 400 mg. potassium chloride. For complete information write Squibb, 745 Fifth Avenue, New York 22, N. Y.

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Squibb Standardized Whole Root Rauwolfia Serpentina (Raudixin) and Benzydroflumethiazide (®Naturetin) with Potassium Chloride

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RAUDIXIN,® RAUTRAX,® AND NATURETIN® ARE SQUIBB TRADEMARKS



for every phase of cough... comprehensive relief

AMBENYL® EXPECTORANT

AMBENYL EXPECTORANT quickly comforts the coughing patient because it is formulated to relieve all phases of cough due to upper respiratory infections or allergies. Combining Ambodryl®—potent antihistaminic; Benadryl®—the time-tested antihistaminic-antispasmodic; and three well-recognized antitussive agents, AMBENYL EXPECTORANT:

• soothes irritation • quiets the cough reflex • decongests nasal mucosa • facilitates expectoration • decreases bronchial spasm • and tastes good, too.

Each fluidounce of AMBENYL EXPECTORANT ◈ contains:

Ambodryl® hydrochloride (bromodiphenhydramine hydrochloride, Parke-Davis)	24 mg.
Benadryl® hydrochloride (diphenhydramine hydrochloride, Parke-Davis)	56 mg.
Dihydrocodeinone bitartrate	⅙ gr.
Ammonium chloride	8 gr.
Potassium guaiacolsulfonate	8 gr.
Menthol	q.s.
Alcohol	5%

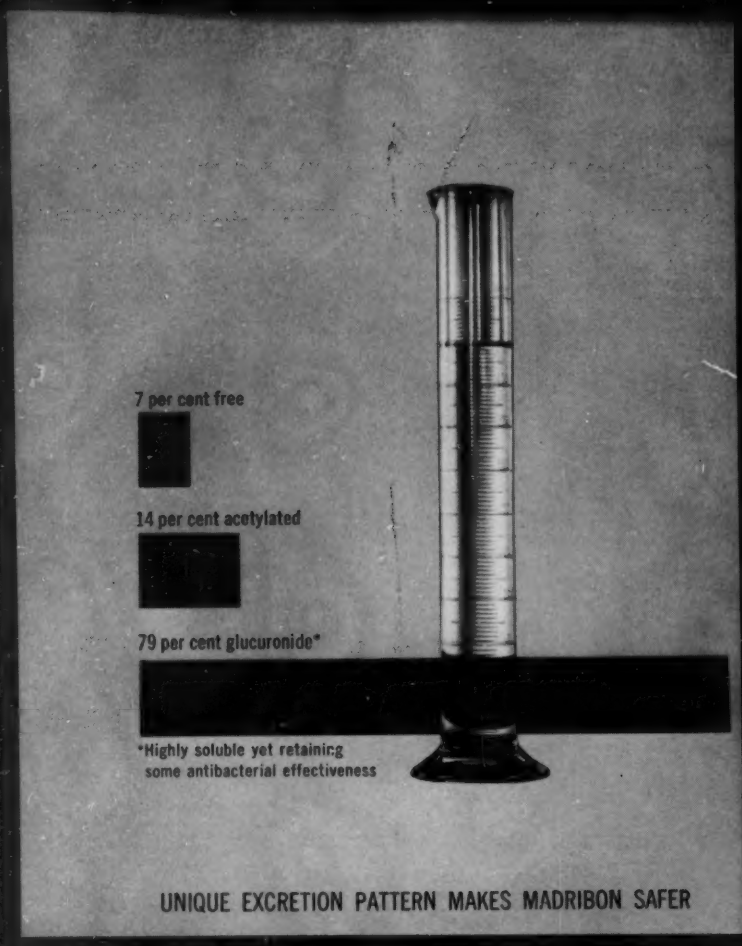
Supplied: Bottles of 16 ounces and 1 gallon.

Dosage: Every three or four hours—adults, 1 to 2 teaspoonfuls; children ½ to 1 teaspoonful. 27140

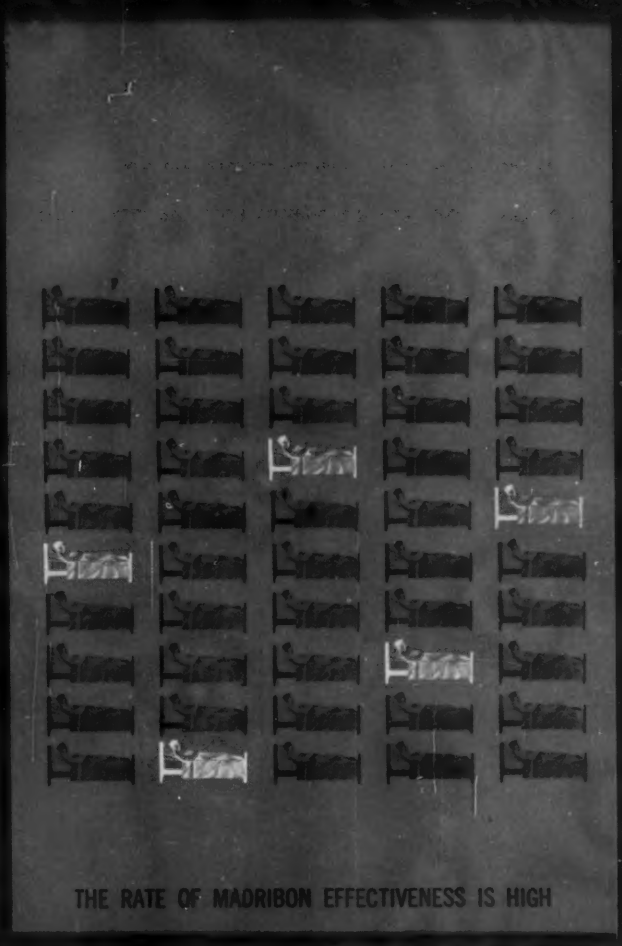
◈ Exempt narcotic

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THE RATE OF MADRIBON EFFECTIVENESS IS HIGH

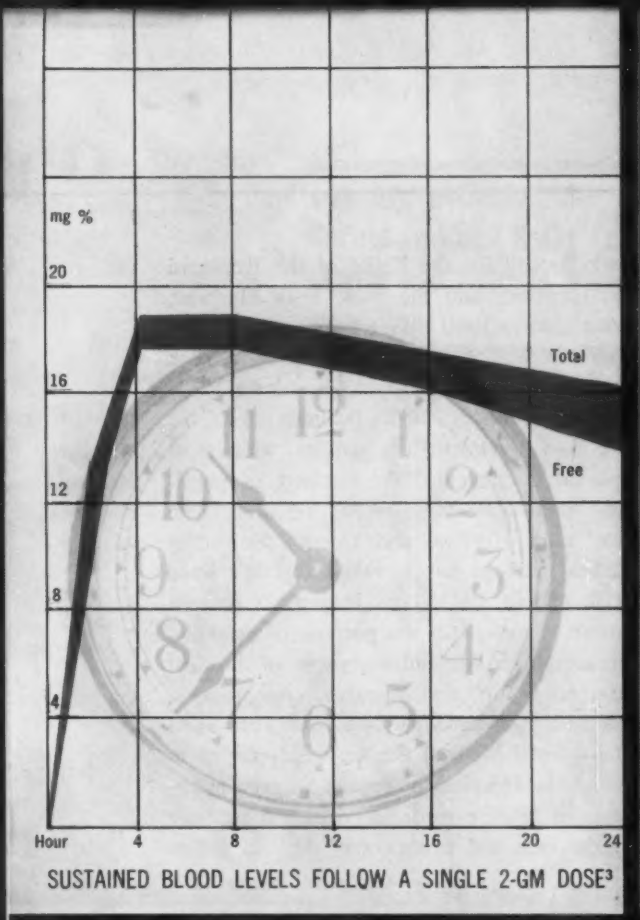
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SUSTAINED BLOOD LEVELS FOLLOW A SINGLE 2-GM DOSE[3]



MADRIBON ONCE-A-DAY THERAPY IS 'KIND TO THE PURSE'

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Consult literature and dosage information, available on request, before prescribing.

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transformation of the melanosome, by enzymatic activity, to the melanin granule. Though extremely basic in nature, their research concerns the formation of malignant melanomas in humans. Lack of the activating enzyme in albinos prevented formation of the pigment even though the melanosome particle was present in the cell.

Affiliation of New York City Medical Groups

A joint announcement has been made by the presidents of Cornell University, the New York Society for the Relief of the Ruptured and Crippled, and the Society of the New York Hospital stating that a new formal affiliation has been signed by the three institutions. In effect, this is an affiliation between Cornell University's Medical College, the Hospital for Special Surgery, which is maintained by the New York Society for the Relief of the Ruptured and Crippled, and the New York Hospital, which is maintained by the Society of the New York Hospital. The Society of the New York Hospital, created by Royal Charter in 1771, provides services and facilities for the care and treatment of patients with most types of diseases, for the teaching of physicians and students, and for research. The New York Hospital and Cornell University Medical College have worked together since 1910, and in 1927, both institutions entered into an affiliation for the purpose of enlarging cooperation in the advancement of medical care, education, and research. Accordingly, new buildings, known as the New York Hospital-Cornell Medical Center, were erected in 1932. The Hospital for Special Surgery, established in 1863, provides services and facilities for the care and treatment of patients suffer-

Continued on page 220a



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"For my patients who need a laxative, I recommend Caroid and Bile Salts Tablets. They relieve constipation gently and help to avoid straining. This is particularly important in cardiac and postsurgical patients."



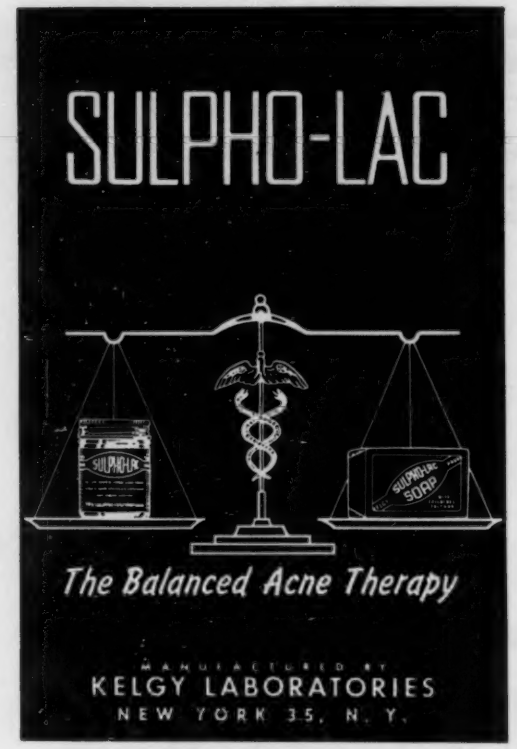
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meprobamate **plus** d-amphetamine... depresses appetite...elevates mood... eases tensions of dieting...**without** overstimulation, insomnia or barbiturate hangover.

Dosage: One tablet one-half to one hour before each meal.

ing from orthopedic, rheumatic, and other crippling conditions. It is constructing the Alfred H. Caspary Research Building, adjoining the hospital, to provide for its expanding research program. Under the terms of the new agreement, the Society of the New York Hospital, Cornell University, and the New York Society for the Relief of the Ruptured and Crippled will each continue their independent corporate existences. However, cooperative programs have been outlined concerning faculty and hospital appointments.

Causes of Eczema Studied

The John A. Hartford Foundation has awarded a grant of $234,383 to the University Hospital of the New York University Medical Center for a three-year study of the causes of eczema in infants. Eczema is a fairly common and trying ailment among infants, occurring particularly during the first two years of life. The project at the University Hospital consists of a morphological approach, involving microscopic studies of the skin; chemical and metabolic studies designed to throw light on abnormalities of the chemical constitution of the body which might underlie the eczematous reaction; immunological studies to determine the role of hypersensitivity to particular foods, and a therapeutic study designed to compare the efficiency of known agents having some value in the treatment of eczema. The team of investigators is headed by Dr. L. Emmett Holt, Jr., Professor and Chairman of the Department of Pediatrics at the Medical Center. Dr. Holt is retiring in order to devote full time to his research activities within the department. A previous grant of $147,255 formed the basis for the decision of the Foundation to continue their sponsorship of this program. To date, the findings of the team have been so promising, and the therapeutic value of the program has proven so effective it is felt that the continuation of this investigation is justified.

Continued on page 222a

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Virus Research at the University of Kansas

A contract totaling $379,290 for one year has been signed between the University of Kansas City, Kansas, and the U.S. Public Health Service. These funds will support the activities of the University's virus research laboratories. Specifying a reimbursable cost basis, the contract will provide funds for activities and facilities of the laboratories headed by Dr. Herbert A. Wenner, Research Professor of Pediatrics. Funds to support the work for the past years have come from the National Foundation. However, when the March of Dimes campaign lagged following the advent of the Salk vaccine, the Foundation thought it advisable to terminate its support of the antisera research project, and the U.S. Public Health Service took over the financing of the project. It is estimated that the Federal government will put hundreds of thousands of dollars in the program over the years to come.

The Wenner team conducts the only program in the United States for the production of antisera used for the positive identification of various types of viruses. The Wenner laboratories played a large part in the teamwork effort to prove the three types of poliomyelitis virus. This was a necessary step before the Salk vaccine could be developed. There are now 61 known viruses, and the laboratories have been engaged in the production of standardized antisera for each. There is now a supply to identify 40 different ones, and work is progressing on the rest. Ten quarts each of antisera for the three types of poliomyelitis have been produced, and two quarts each for the other 37 viruses. These 26 gallons represent a total cost of one million dollars.



"Congratulations, you've been selected this month to pay your bill . . ."

Dr. Calvin W. Woodruff at Beirut

Dr. Calvin W. Woodruff, Professor of Pediatrics at the Vanderbilt University School of Medicine, Nashville, is resigning to accept an appointment as Professor of Pediatrics and Chairman of the Department at the American University of Beirut. This University, sponsored by Americans since 1866, is the largest American institution outside of the United States. It has an average of 2,500 students presenting 52 different nationalities and 21 religions. The Medical Division, founded 93 years ago, operates schools of medicine, nursing, pharmacology, and public health. The University also operates a teaching hospital of 230 beds with modern laboratories and research facilities.

Appointment at Lederle

Dr. Benjamin W. Carey, Medical Director of American Cyanamid Company's Lederle Laboratories, has been elected to a three-year term on the Alumni Advisory Council of Harvard Medical School.

Before being elevated to his present post at Lederle in 1957, Dr. Carey spent thirteen years as director of the laboratories, responsible for the coordination of all research programs.

He is a graduate of the University of Illinois

Continued on page 224a

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the
bacteria-prone
cold

Tain

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protection
with...

safe antibiosis

Triacetyloleandomycin, equivalent to oleandomycin 125 mg. This is the URI antibiotic, clinically effective against certain antibiotic-resistant organisms.

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Triaminic®, 25 mg., three active components stop running noses. Relief starts in minutes, lasts for hours.

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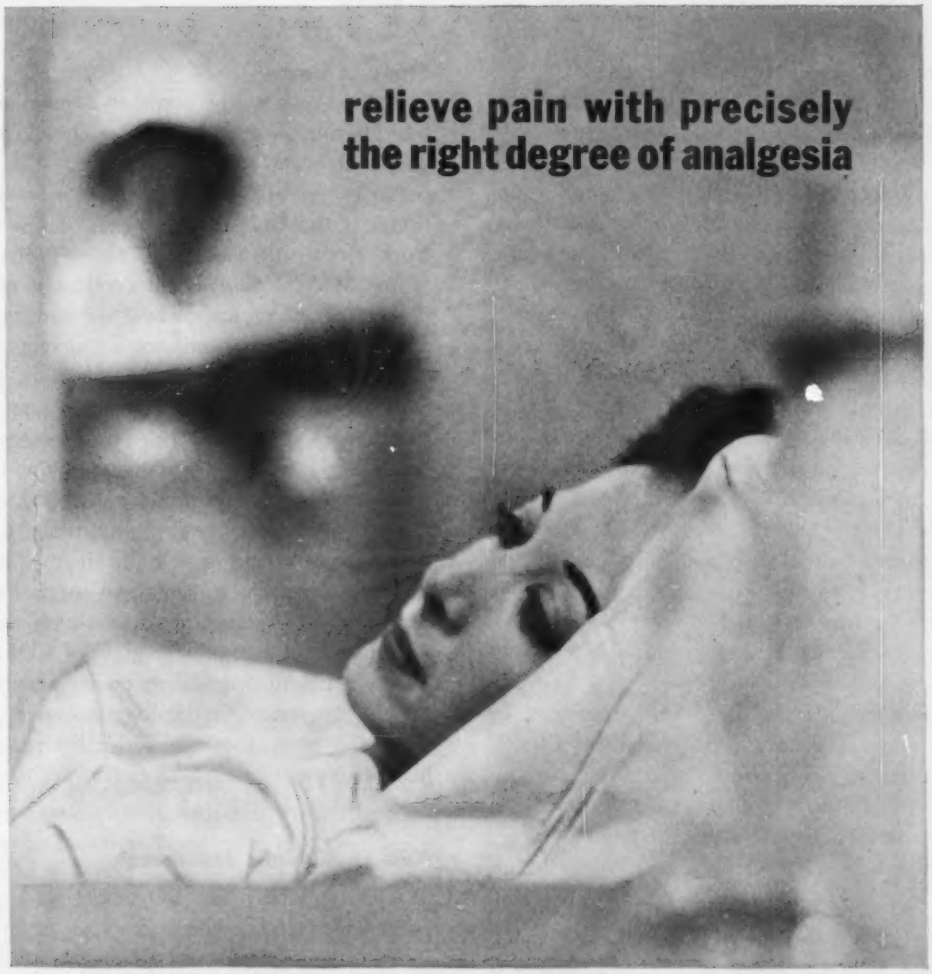
and received his M.D. from Harvard in 1932. He served his internship at Johns Hopkins Hospital and at Boston Children's Hospital, where as a resident he specialized in pediatrics. From 1935 to 1938 he was an instructor in Bacteriology and Pediatrics at Harvard Medical School. He then served three years as Assistant Professor of Pediatrics at Wayne University before joining Lederle in 1941.

Educational Experiment at Georgetown University

An educational experiment was called a pioneering step in meeting the great problem of supplying the Nation with top-quality health manpower by Surgeon General L. E. Burney of the U.S. Public Health Service. Twenty-six high school juniors worked during the two summer months with established scientists on research in basic and clinical science in the Georgetown University Medical Center. The primary goal of the project, the first of its kind in the country, was to attract more high-calibre students to medical and dental scientific research. According to the Doctor, the Georgetown experiment goes to the heart of the problem of seeking new ways of assuring that sufficient numbers of qualified young people enter the health field. It may well blaze a trail which will be followed by many other institutions throughout the country. In the health field, he pointed out, there is a great variety of occupations from which to choose, the Public Health Service now having more than 60 professional health specialties. The health manpower problem poses a tremendous challenge to medical education in particular and to society as a whole.

More schools, more teachers and more facilities are urgently needed. The long duration of the medical education period and its high cost tend to restrict candidates to upper-income families who can support the student throughout the training period.

Continued on page 226a



control moderate to severe pain 'Empirin' Compound and 'Empirin' Compound with Codeine Phosphate products provide pinpoint control, anywhere along the pain scale, for all intensities up to that which requires morphine—**without narcotic excess.** For effective analgesic, antipyretic and antitussive action, prescribe the 'Empirin' Compound that suits your purpose best.

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Blood Preservative

Extended clinical trials of a citrate-phosphate-dextrose anticoagulant preservative have shown that red-blood cells can be transfused safely and effectively thirty days after collection, virtually eliminating the waste of blood through out-dating. Prior to this, preservatives have limited the effective storage of red-blood cells to twenty-one days. The viability of transfused red-blood cells has been confirmed by tagging the cells with radioactive chromium.

A clinical trial was carried out in conjunction with open-heart surgery at the Peter Bent Brigham Hospital early in 1960. Ten patients were given blood preserved with the new anticoagulant both during and following surgery. No harmful reactions were recorded. In all cases the transfused red-blood cells were effective in restoring the oxygen-carrying capacities of the blood.

The lengthened storage factor provided by the preservative is especially valuable with regard to the rare blood groups. It is estimated that 50,000 units of these rare blood units are discarded annually because of limited storage periods.



"I have a dizzy feeling in my rectum."

Study of Burns

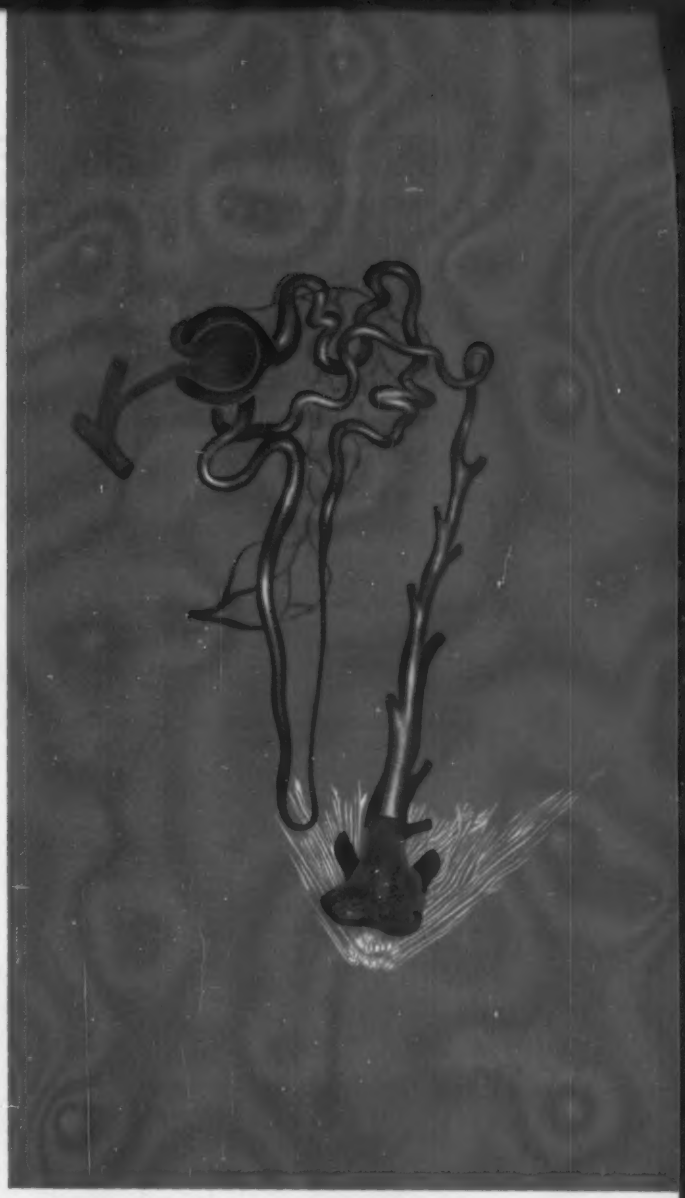
A three-year study planned to develop methods for minimizing the lethal and deforming effects of burns will be undertaken at a new center for research in burn therapy to be established at the University Hospital of the New York University Medical Center. Professors at the Medical School will conduct a multi-pronged attack on the medical and surgical aspects of burn therapy, utilizing a team approach to the problem. Three major functions have been established for the research center: to study methods of reducing the number of deaths and crippling deformities resulting from severe burns; to perform research in shock treatment, infection control, nutrition, tissue transplantation and wound healing; to train specialists, medical students and surgical residents in burn treatment and long-term reconstructive surgical care. The grant of $332,571 by the Hartford Foundation makes possible a broader approach to the immunological and metabolic as well as the surgical aspects of burn therapy.

New Ophthalmic Instrument

A revolutionary new instrument for use in ophthalmic surgery which employs the split-second use of superpowerful beams of light instead of the traditional scalpel, has been obtained by the Hospital of the University of Pennsylvania with funds contributed by former patients. During the past year, patients suffering from retinal detachment have contributed to a special fund to enable the Hospital's Department of Ophthalmology to make the purchase. The $13,000 instrument, known as a Light Coagulator, will serve primarily for the treatment of detached retina. This separation causes "blind spots" in the patient's vision.

The Light Coagulator will enable physician's to correct some cases of detached retina which could not be treated by conventional surgical methods without loss of vision or, possibly, of

Continued on page 228a



on the pathogenesis of pyelonephritis:

"An inflammatory reaction here [renal papillae] may produce sudden rapid impairment of renal function. One duct of Bellini probably drains more than 5000 nephrons. It is easy to see why a small abscess or edema in this area may occlude a portion of the papilla or the collecting ducts and may produce a functional impairment far in excess of that encountered in much larger lesions in the cortex."[1]

The "exquisite sensitivity"[2] of the medulla to infection (as compared with the cortex), highlights the importance of obstruction to the urine flow in the pathogenesis of pyelonephritis. "There is good cause to support the belief that many, perhaps most, cases of human pyelonephritis are the result of infection which reaches the kidney from the lower urinary tract."[3]

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References: 1. Schreiner, G. E.: A.M.A. Arch. Int. M. 102:32, 1958. 2. Freedman, L. R., and Beeson, P. B.: Yale J. Biol. & Med. 30:406, 1958. 3. Rocha, H., et al.: Yale J. Biol. & Med. 30:341, 1958.

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Gives rapid therapeutic response
Can be taken between meals

- without iron-nausea
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Dosage: 1 or 2 Tablets (1-2 cc. Liquid) three times a day.
Supply: Tablets—bottles of 100; Liquid—bottles of 60 cc. Each tablet or cc. supplies 40 mg. elemental iron.

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meprobamate **plus** d-amphetamine...suppresses appetite...elevates mood... reduces tension...**without** insomnia, overstimulation or barbiturate hangover.

Dosage: One tablet one-half to one hour before each meal.

Lederle

the eye. It is believed, too, that certain intraocular tumors may be treated with the Coagulator, thereby saving an eye which would otherwise have to be sacrificed.

The principle of the Light Coagulator, developed in West Germany by Carl Zeiss, Inc., involves the use of an intense light source, with a brightness which can be regulated to several times the brightness of the sun, combined with an ophthalmoscope. The intense heat created by the Light Coagulator is pinpointed on the area to be treated for a very brief time during which it sears the tissue; the resulting scar binds the separated layers together. Thus, both for cases of detached retina and of single holes in the retina, the Light Coagulator, under certain circumstances, does an effective "welding" job, preserving vision and correcting blind spots.

Body Radiation Counter

An instrument known as a human-body radiation counting system was installed at the Veterans Administration center in Los Angeles. The 25-ton steel room, with instrumentation, makes possible measurement of the amount of radiation present in the body from fall-out, medical dosage, handling radioactive materials, or other sources. It will be used in diagnosis and medical research, and will be an important resource for civil defense. The steel chamber is made of laminated sheets of steel, plus a lead lining. It is housed in a steel building which is insulated and air conditioned. In testing, the patient sits in a chamber; mounted over him is an extremely sensitive detector which transmits the radiation measurement to an analyzer mounted outside the steel chamber.

The Los Angeles unit is the second such installation in the Veterans Administration centers, and brings to six the number of such radiation counting systems in the United States, each of these having been individually designed and constructed.

Concluded on page 230a



because you treat them gently

OTRIVIN®

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for gentle relief of stuffy nose

Otrivin relieves stuffy nose by decongesting the engorged mucosa, re-establishing *comfortable* nasal airways. Its action is not only gentle but prompt and prolonged, with little or no rebound congestion or other side effects. ***Complete information sent on request.***

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The Veterans Administration's other total-body radiation counter is at the agency's hospital in Boston. The Boston hospital is now in the process of installing around its counter, 175 tons of surplus steel armor plate obtained from the Navy. The shielding is necessary to screen out radiation from outside sources, so that as far as possible only the radiation from the body of the person undergoing testing is counted. It is possible with these counters to measure the natural human radioactivity emanating from body potassium. Knowledge of body-potassium content is of importance in diagnosis of diseases involving the nerves, muscles, and kidneys.

Ochsner Clinic, New Orleans

Dr. Merrill O. Hines has been appointed Medical Director for the Ochsner Clinic, New Orleans, to replace Dr. Guy A. Caldwell who has announced his retirement, but who will continue to serve as a Trustee and Vice President of the Alton Ochsner Medical Foundation. Dr. Caldwell was a founding partner of the Clinic and has been its Medical Director since 1954. He will also continue to act as consultant to the Clinic's Department of Orthopedic Surgery, which he has headed since 1942. Dr. Hines has been head of the Ochsner Clinic's Department of Proctology since 1946.



"... Let's see now ... we left off where your employees began taking a hoola-hoop break."

Russian Translations

The American Institute of Biological Sciences, with support from the National Science Foundation, is currently translating and publishing seven Russian research journals in biology. A separate program of translation and publishing of selected Russian monographs is also being undertaken.

Dr. George T. Pack

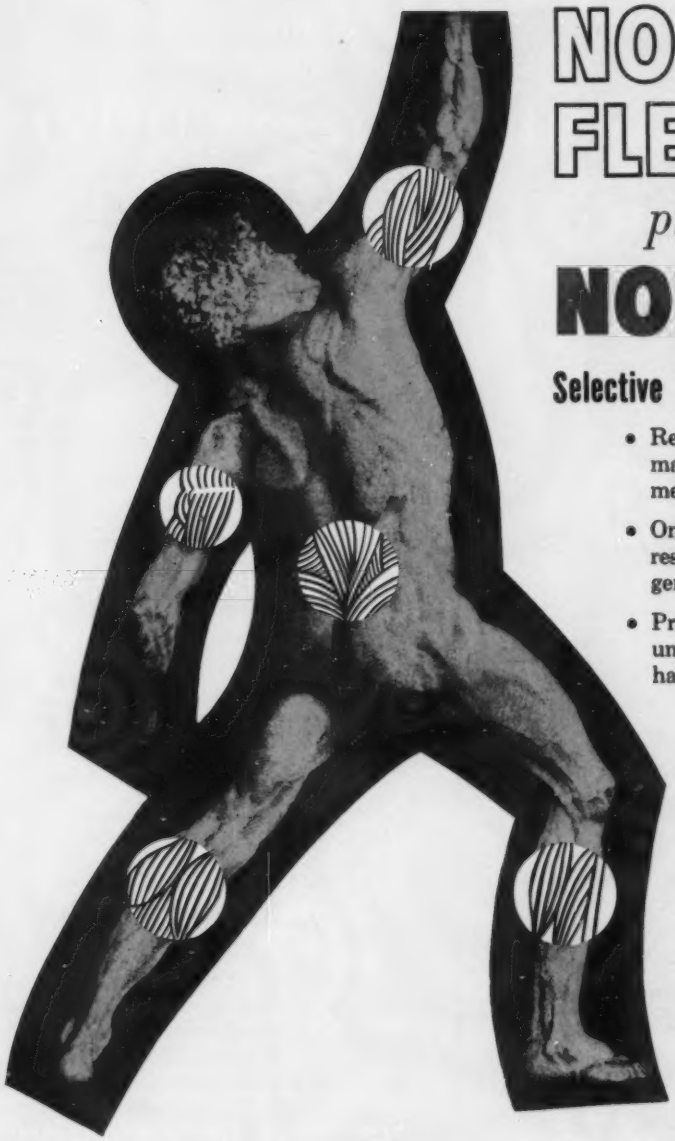
In a ceremony at the United Nations, Dr. George T. Pack was awarded the Order of Rubin Dario with the rank of Great Silver Cross, presented by Ambassador Guillermo Lang in behalf of President Luis Samoza of Nicaragua, in recognition of services to the cancer program of that country.

South Chicago Community Hospital Expands

Originally opened in 1905, the South Chicago Community Hospital has a two-million-dollar expansion program underway. When plans are completed, the capacity will be more than 300 beds.

Hypnosis in Childbirth

According to replies received from a questionnaire sent out by the American Society of Clinical Hypnosis, childbirth is the condition in which hypnosis is used most frequently. It is reported that the amount of chemical anesthesia needed when combined with hypnoanesthesia is reduced by as much as 63 per cent. The period of labor also was reduced by approximately three and one-half hours. The answers gave a total of 4,363 deliveries in which hypnoanesthesia alone was used.



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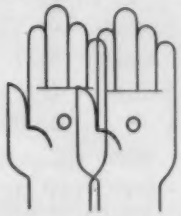
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(Answer from page 33a)

ANEURYSM OF THE POSTERIOR COMMUNICATING ARTERY

Note dye outlining the aneurysm at the origin of the posterior communicating artery.

WHO IS THIS DOCTOR?

(Answer from page 71a)

NICOLAUS COPERNICUS

MEDIQUIZ

(Answers from page 77a)

1 (D), 2 (C), 3 (D), 4 (E), 5 (D), 6 (C), 7 (C), 8 (C), 9 (E), 10 (E), 11 (B), 12 (C), 13 (C), 14 (B), 15 (E).

WHAT'S YOUR VERDICT?

(Answer from page 55a)

The Supreme Court reversed the judgment of the trial court, holding that there was sufficient evidence to warrant submission to the jury of issues of negligence of the physician in diagnosing and treating his patient's injury. The Court said: "A patient is entitled to a thorough and careful examination such as his condition and attending circumstances will permit, with such diligence and methods of diagnosis as are usually approved and practiced by physicians of the same school of medicine, of ordinary learning, judgment and skill, under like circumstances and in like localities."

Based on decision of
SUPREME COURT OF IOWA



WHENEVER COUGH THERAPY IS INDICATED

HYCOMINE®

Syrup

THE COMPLETE Rx FOR COUGH CONTROL

cough sedative | antihistamine
decongestant | expectorant

■ relieves cough and associated symptoms in 15-20 minutes ■ effective for 6 hours or longer ■ promotes expectoration ■ rarely constipates ■ agreeably cherry-flavored

Each teaspoonful (5 cc.) of HYCOMINE* Syrup contains:

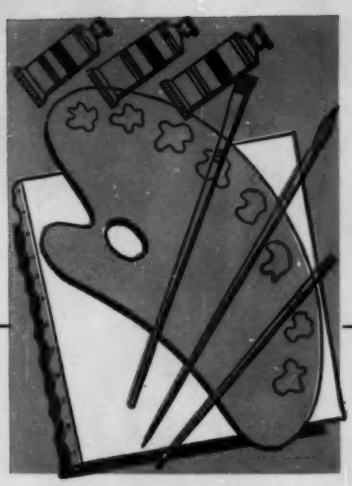
Hycodan®	
Dihydrocodeinone Bitartrate 5 mg.	6.5 mg.
(Warning: May be habit-forming)	
Homatropine Methylbromide 1.5 mg.	
Pyrilamine Maleate	12.5 mg.
Phenylephrine Hydrochloride	10 mg.
Ammonium Chloride	60 mg.
Sodium Citrate	85 mg.

Average adult dose: One teaspoonful after meals and at bedtime. May be habit-forming. Federal law permits oral prescription.

Literature on request

ENDO LABORATORIES
Richmond Hill 18, New York

*U.S. Pat. 2,630,400



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He did the finished painting in July. In order to make the illustration completely realistic he and Mrs. Brindle staged a mid-summer Thanksgiving dinner.

"Mrs. Brindle went out and bought a turkey, stuffed it and cooked it," the artist disclosed. "Vegetables, cranberry sauce, salad—we had the works. It was a real big production."

The food was transported to the home of Brindle's son-in-law, Edward T. Phillips. The Phillips family (including four bright-eyed youngsters) made fine models and their home a good background for the Thanksgiving Day scene. "They recently bought the house," according to Brindle, "a lovely old place which dates back to the 1700's, and did a fine remodeling job on it. I helped a little in designing the kitchen."

To complete the scene, Brindle (the white-haired gentleman) joined the others at the table and his wife posed as the maid. When the necessary photographs had been taken, everyone got his reward, a delicious turkey dinner.

An extra place was made for the hard-working photographer.

"The painting presented no problems," Brindle said. "Everything jelled very nicely."

Judging by the finished painting, we find ourselves in complete agreement.





NOW–for more comprehensive control of

'pain & spasm'



- pain due to or associated with
- spasm of skeletal muscle

a NEW Robins *muscle relaxant-analgesic*

Robaxisal®

ROBAXIN® WITH ASPIRIN

ROBAXISAL, a new dual-acting muscle relaxant-analgesic, effectively treats both skeletal muscle spasm and severe pain due to or associated with the spasm. Each Tablet contains:

- A relaxant component — Robaxin* — widely recognized for its prompt, long-lasting relief of painful skeletal muscle spasm, with unusual freedom from undesired side effects. . . . . 400 mg.

*Methocarbamol 'Robins', U.S. Pat. No. 2770649.

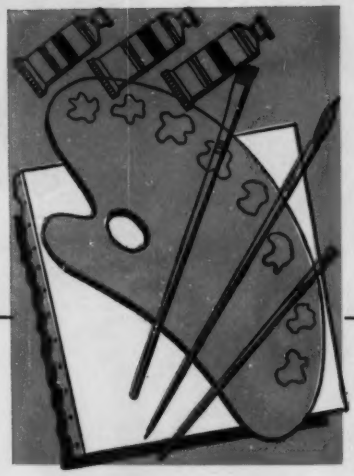
- An analgesic component—aspirin—whose pain-relieving effect is markedly enhanced by Robaxin, and which has added value as an anti-inflammatory and anti-rheumatic agent. . . . (5 gr.) 325 mg.

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A. H. ROBINS CO., INC., Richmond 20, Va.

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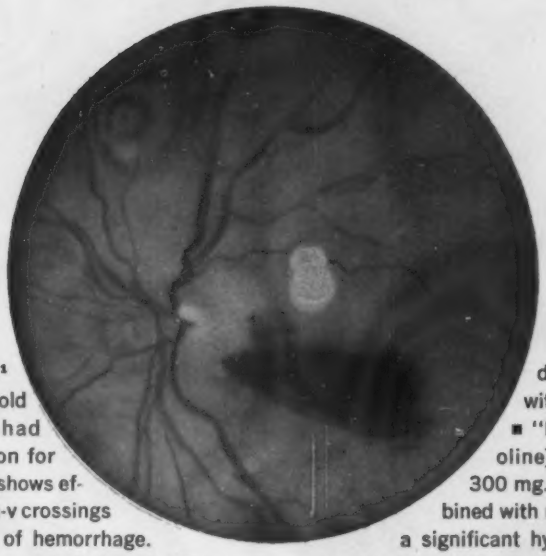
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1. Bedell, A. J.: Clin. Symposia 9:135 (Sept.-Oct.) 1957.
2. Lee, R. E., Seligman, A. M., Goebel, D., Fulton, L. A., and Clark, M. A.: Ann. Int. Med. 44:456 (March) 1956.

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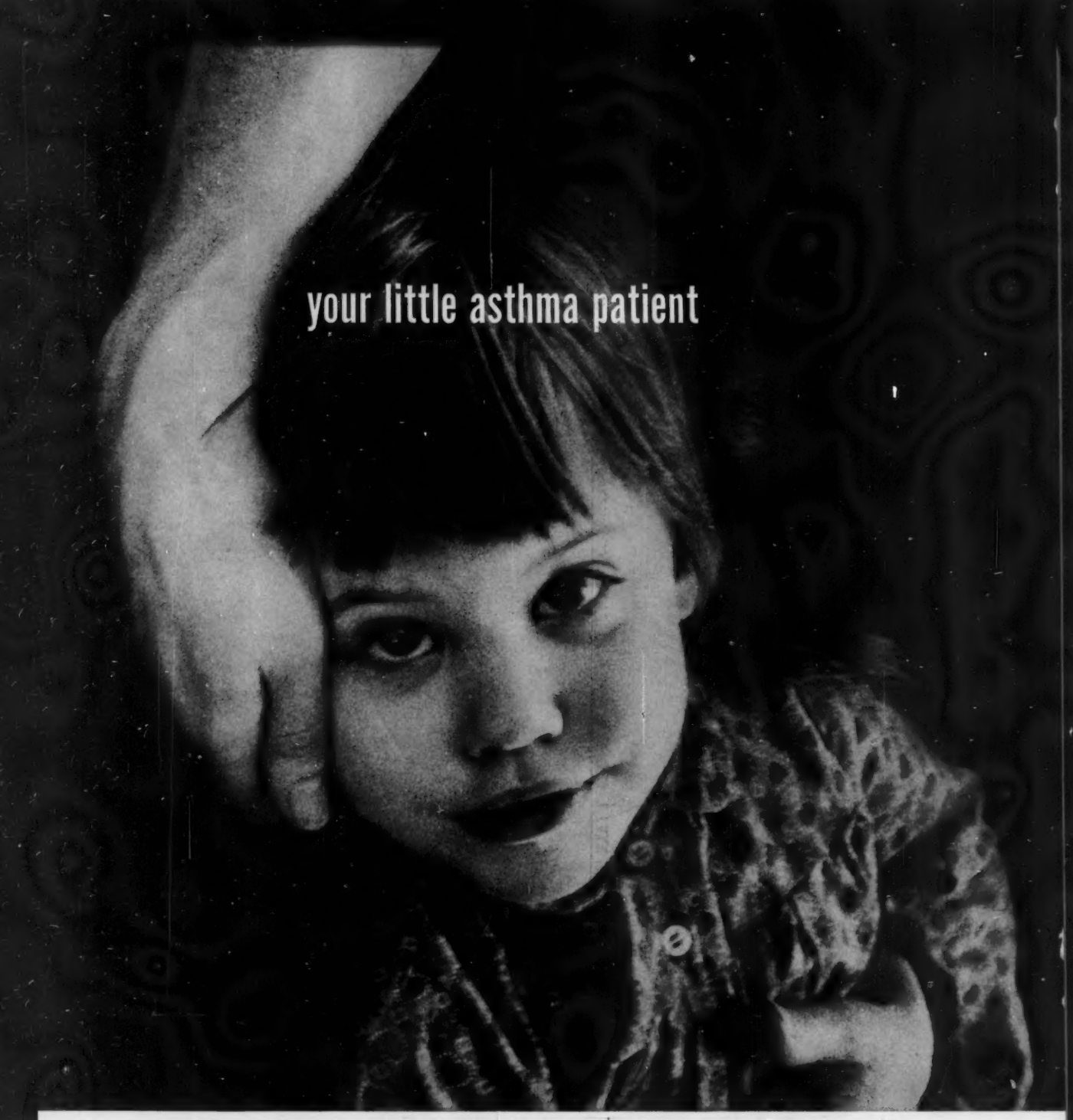
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(reserpine and hydralazine hydrochloride CIBA)

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SUMMIT, N. J.



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1 cc. once each week

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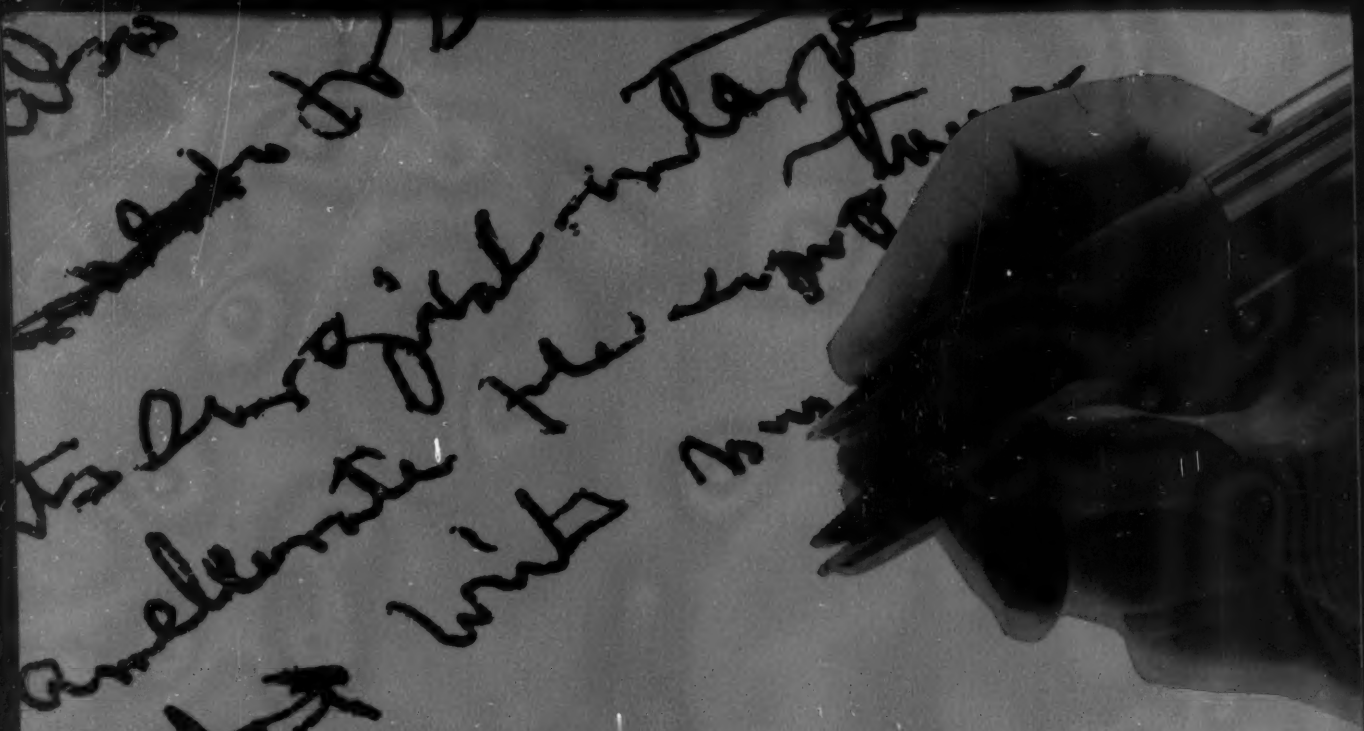
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